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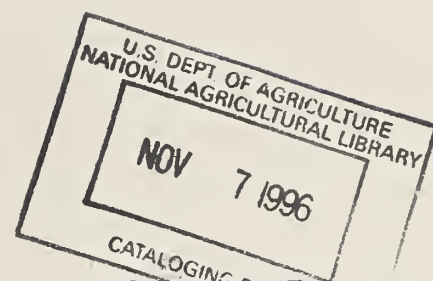


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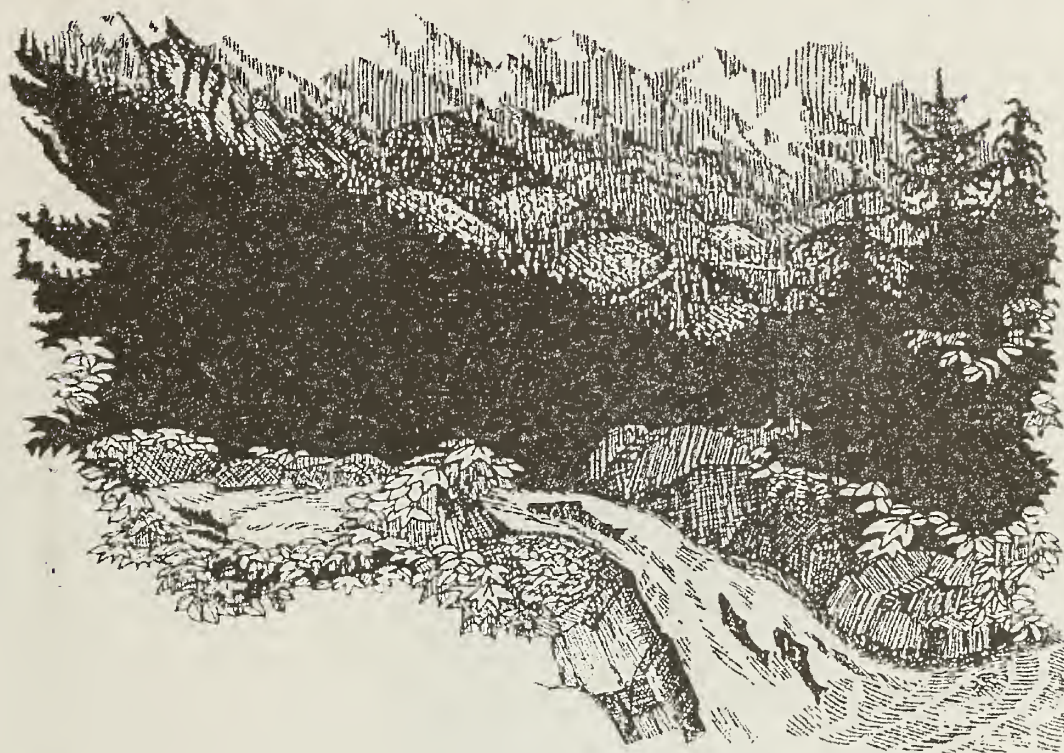
Timber Sales

Final Environmental Impact Statement

Volume I



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Chapter 1

Purpose and Need

In compliance with Federal regulations, the USDA Forest Service has prepared this Environmental Impact Statement (EIS) for proposed timber harvest and related activities in the Northwest Baranof Project Area. The Project Area is located on the Sitka Ranger District of the Chatham Area, Tongass National Forest (See Figures 1-1 and 1-2).

This EIS follows the format established in the Council on Environmental Quality (CEQ) regulations (40 CFR 1500-1508). In this document, we disclose the physical, biological, economic, and social consequences of five alternatives, including the no-action alternative.

There are four chapters in this EIS (see Table 1-1). A Summary of Chapters 1 through 4 is available as a separate document. Supporting materials are included in the Appendices, and additional documentation is filed in the project planning record at the Forest Supervisor's Office in Sitka, Alaska.

Table 1-1
How This EIS is Organized

Chapter 1 Purpose and Need	The purpose and need for the project, decision to be made, background information, public issues, and other considerations.
Chapter 2 Alternatives	The presentation and comparison of alternatives, with information on their environmental impacts and how they would be implemented with measures to protect the environment.
Chapter 3 Affected Environment	A description of the existing condition of the environment that may be affected by the alternatives under consideration.
Chapter 4 Environmental Consequences	Environmental changes likely to occur with the implementation of the alternatives.
Alternative Maps	Maps for each alternative considered in detail which illustrate proposed units and roads, and display other geographic features of the Project Area.
Appendices	Supporting information.

Project Overview

Purpose and Need

The purpose and need for the Northwest Baranof Project is (1) to implement direction contained in the Tongass Land Management Plan (TLMP), as amended (USDA Forest Service 1979, 1986, 1991), (2) to help provide a timber supply from the Tongass National Forest consistent with sound multiple use and sustained yield objectives, (3) to help meet market demand for the timber industry in Southeast Alaska, and (4) to help provide employment in the wood products industry throughout Southeast Alaska. The Northwest Baranof Project is expected to provide between 30 and 100 mmbf of timber, given the guidance in the TLMP.

The TLMP assigned Land Use Designation (LUD) IV to approximately 38 percent of the Project Area (Figure 1-3). This designation provides for intensive resource use and development with an emphasis on commodity resources such as timber. The TLMP assigned LUD III to the other 62 percent of the Project Area. LUD III provides for a variety of uses, including timber production. In addition, the TLMP scheduled timber sale preparation for all Management Areas in the Project Area. A comparison of the desired future condition for the Project Area, as reflected in the TLMP direction, with the existing condition shows the need to convert suitable stands of old-growth timber to managed productive stands capable of long-term timber production.

Section 101 of the Tongass Timber Reform Act of 1990 (TTRA) directs that the USDA Forest Service shall ". . . to the extent consistent with providing for the multiple use and sustained yield of all renewable forest resources, seek to provide a supply of timber from the Tongass National Forest which (1) meets the annual market demand for timber from such forest and (2) meets the market demand from such forest for each planning cycle." Section 101 of the TTRA specifies that Forest Service efforts to seek to meet market demand are subject to appropriations, National Forest Management Act of 1976 (NFMA) requirements, and other applicable law. Providing a timber supply from the Tongass for sustained local wood products industry employment and related economic and social benefits is an objective of the TLMP, the Alaska National Interest Lands Conservation Act (ANILCA), as amended by the TTRA, and the Ketchikan Pulp Company (KPC) long-term contract.

Two indicators of market demand are used in further defining the need. First, the price of bids for timber in the region remains high. Independent sales continue to sell for more than the appraised value. This reflects the national and world demand for timber. Second, there is a demonstrated mill capacity in the region to process the logs, if the supply of timber is available. Timber volume from this Project Area may help the Forest Service come closer to meeting the objective of providing a three-year supply of timber to the existing dependent industry. This supply is a means of providing for stability in relation to fluctuating market demand (Morse 1995, Brink 1995). A substantial component of the economy of Southeast Alaska is dependent on a viable timber industry. Based on these factors, there is a clear need for the project.

At this time, the timber volume from the Northwest Baranof Project is scheduled to be made available as independent timber sales. However, timber volume from the Project

Area could be made available as one or more KPC long-term contract offerings. (See the section which follows in this chapter entitled "Background.")

Decision to be Made and Responsible Official

The Council on Environmental Quality (CEQ) regulations state that an EIS "... should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision-maker. . . ." As a result, this EIS is not a decision document but is written to provide sufficient information for the decision-maker.

The Chatham Area Forest Supervisor is the responsible official for this Project. He must decide whether or not to make timber available from the Project Area in accordance with the TLMP. Furthermore, if he selects an alternative which proposes timber harvest, he must decide:

- the volume of timber to make available through one or more independent timber sales;
- the location of harvest units, roads, and log transfer facilities (LTFs);
- mitigation measures and enhancement opportunities for sound resource management; and
- whether there may be a significant restriction on subsistence uses.

The decision is documented in the Record of Decision (ROD) distributed with this Final EIS. In the ROD, the Forest Supervisor may decide to:

- select one of the alternatives analyzed within the Final EIS,
- modify one alternative or mix components from two or more alternatives, as long as the environmental consequences of the action have been fully analyzed within the Final EIS, or
- reject all alternatives and request further analysis.

Project Area

The Project Area is located in the Tongass National Forest at the northwest end of Baranof Island. It lies approximately five miles north of Sitka, Alaska and encompasses 156,003 acres. The Project Area includes the major watersheds of Rodman Creek, Fish Bay Creek, and Nakwasina River. It also includes the lands on Baranof Island bordered by Nakwasina Sound, Nakwasina Passage, Neva Strait, and Peril Strait (Figure 1-1).

Background

The Project Area was, until recently, part of the Alaska Pulp Corporation (APC) long-term timber sale contract area. In 1957, the Forest Service entered into a long-term timber sale contract with the Alaska Lumber and Pulp Company (later renamed Alaska Pulp Corporation). On September 30, 1993, APC ceased operation of its Sitka pulp mill, whereupon the Forest Service terminated the long-term timber sale contract with APC on April 14, 1994. Termination of the APC contract shifted the focus for making timber available in the Project Area from long-term timber sale contract offerings to competitive independent timber sales. Since the termination of the APC contract, the Forest Service has continued to assess market demand for timber in Southeast Alaska as part of its

1 Purpose and Need

independent timber sale program. This market assessment continues to affirm demand for timber volume in Southeast Alaska (Morse 1995, Brink 1995).

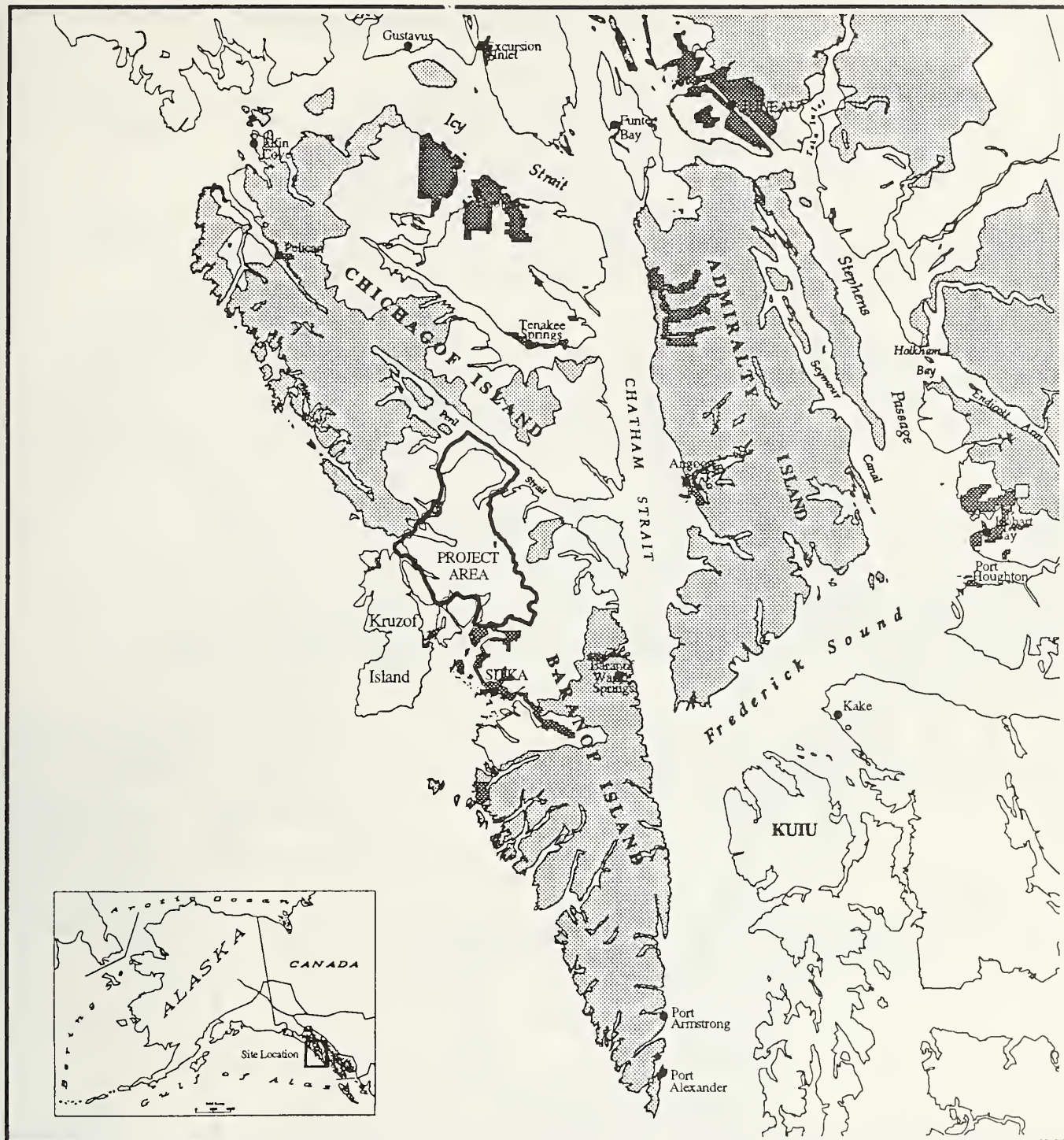
As a consequence of the termination of the APC long-term contract, timber that was previously committed to APC contract is now available for Ketchikan Pulp Company (KPC) under its long-term contract. KPC operates a pulp mill and a sawmill in Ketchikan and a sawmill in Metlakatla. It is projected that offerings to KPC from the Stikine and Chatham Areas will be needed to help meet KPC long-term contract volume requirements (Arrasmith 1995).




Sale offerings currently scheduled, undergoing NEPA evaluation, or at some other stage in the preparation process are projected to be needed to help meet the KPC long-term contract and independent sale program's supply objectives. If any currently planned independent sales were converted to KPC contract offerings, equivalent volume currently planned for KPC contract offerings would likely be needed for independent sale offerings in order to meet the projected need for independent sale volume.

The first offerings from the Project Area could be made available in 1996 to help meet either independent sale program or KPC long-term contract supply objectives. The Northwest Baranof Project is currently scheduled to be implemented as independent timber sales.



Figure 1-1
Vicinity Map



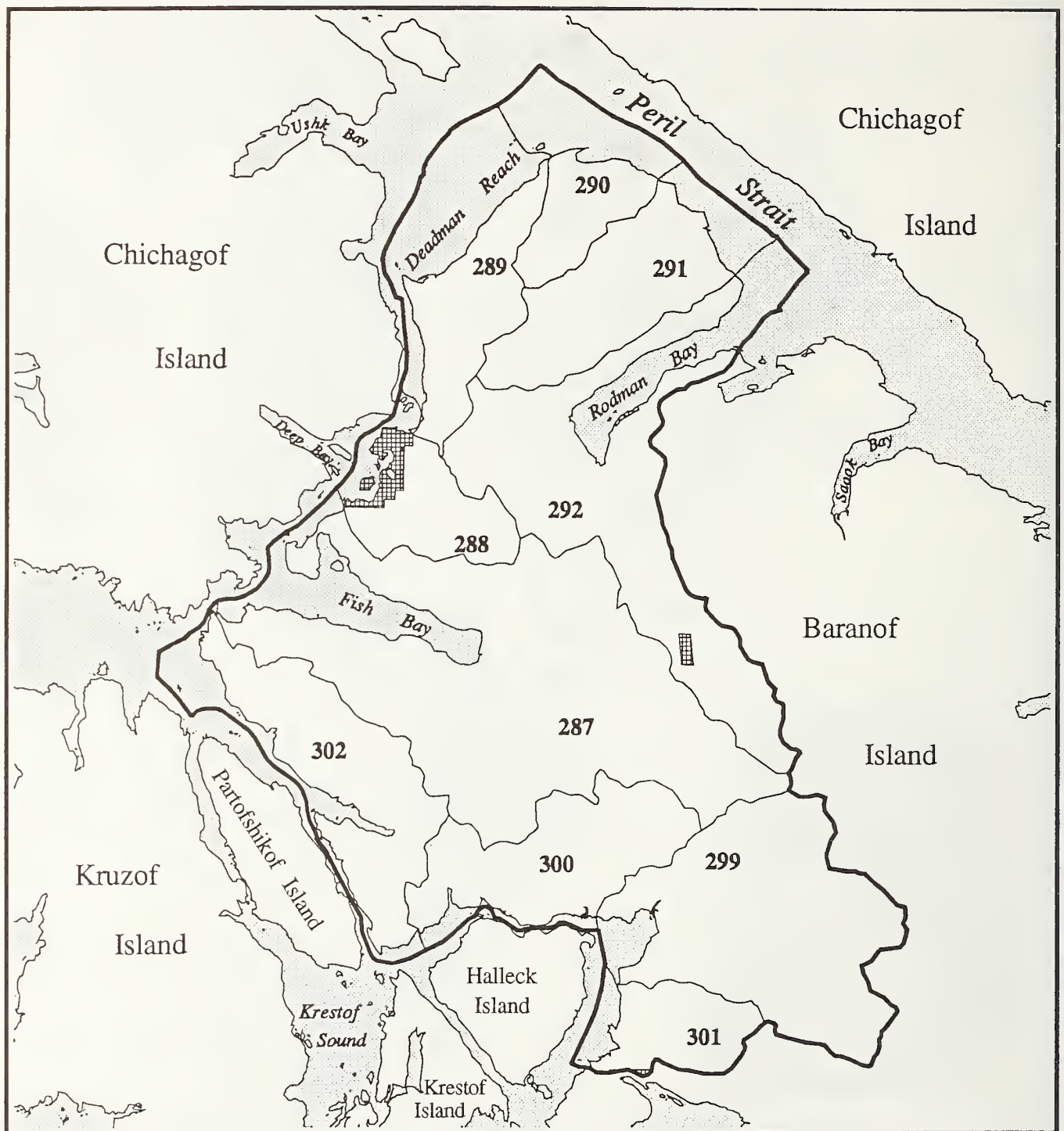
-  Project Boundary
-  Land Allocated to Wilderness or Roadless Management
-  Land Ownership or Selection other than National Forest

8 4 0 8 16
Scale in Miles



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Figure 1-2
Map of VCUs



 Private Lands
 VCU Boundaries

2 1 0 2 4
Scale in Miles



Relationship of This Project to the Tongass Land Management Plan (TLMP)

The National Forest Management Act of 1976 (NFMA) directs each National Forest to prepare a land management plan. The Tongass Land Management Plan (TLMP) was completed in 1979 to guide management of the Tongass National Forest and amended in 1986 and 1991. The TLMP is currently undergoing revision as mandated by the NFMA. Until a new ROD is signed and the revised plan is implemented, the TLMP (1979, as amended) remains in effect. In addition to the TLMP, the Alaska Regional Guide (1983) addresses regional issues specific to Alaska, establishes management standards and guidelines, and displays resource outputs for the Tongass National Forest.

We developed the Northwest Baranof Project to implement management direction contained in the TLMP. Each of the alternatives considered in detail for this project is consistent with the current TLMP. The TLMP includes ten goals which describe the desired condition to be achieved through implementation of the Plan. One of these states that "the goal is to make enough timber available from National Forest lands to maintain current levels of timber-related employment...."

The TLMP established Land Use Designations (LUDs) to guide management of the land for certain uses. The LUDs describe activities that may be authorized in a given area. The LUDs are assigned to areas known as value comparison units (VCUs), which are roughly equivalent to large watersheds. The boundaries of a VCU usually follow easily recognizable watershed divides. In some cases, an island or a group of small islands form a single VCU. Figure 1-2 displays the Project Area's VCUs (Forest Service 1979). The TLMP also formed management areas with one or more contiguous VCUs and provided direction for each management area.

Land Use Designations (LUDs)

Amenities are resources that are pleasing to the mind or senses. Amenity uses or values cannot be easily measured in dollars. Recreation and scenic quality are examples of amenity values.

Commodities are resources that have a dollar or market value. Timber and minerals are examples of commodity values.

The TLMP allocates each of the ten VCUs within the Project Area to LUD III or LUD IV (Figure 1-3). The purpose and management implications of each of these LUDs is described below:

Land Use Designation III

Purpose - Areas allocated to LUD III are to be managed for a variety of uses. The emphasis is on managing for both amenity- and commodity-oriented uses in a compatible manner to provide the greatest combination of benefits. These areas usually have high amenity values in conjunction with high commodity values. Within the Project Area, VCUs 287-290, and 300-302 are allocated to LUD III.

Management Implications - Potential timber yields will be reduced to the extent needed to protect important biological and aesthetic values. Both permanent and temporary roads are allowed. Roads are located and designed to retain important recreational and scenic qualities. Needed trails can be provided and a full range of recreational facilities is permissible. A full range of fisheries improvement projects is permitted.

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Land Use Designation IV

Purpose - Areas allocated to LUD IV provide opportunities for intensive development of resources. Emphasis is primarily on commodity, or market resources and their use. Amenity values are also provided for. When conflicts over competing resource uses arise, conflicts would often be resolved in favor of commodity values. Within the Project Area, VCUs 291, 292, and 299 are allocated to LUD IV.

Management Implications - Potential timber yields will be reduced to the extent necessary to protect key biological and aesthetic values. Both permanent and temporary roads are allowed and motorized use is permitted. Needed trails can be provided and a full range of recreational facilities is permitted. A full range of fisheries improvement projects is permitted.

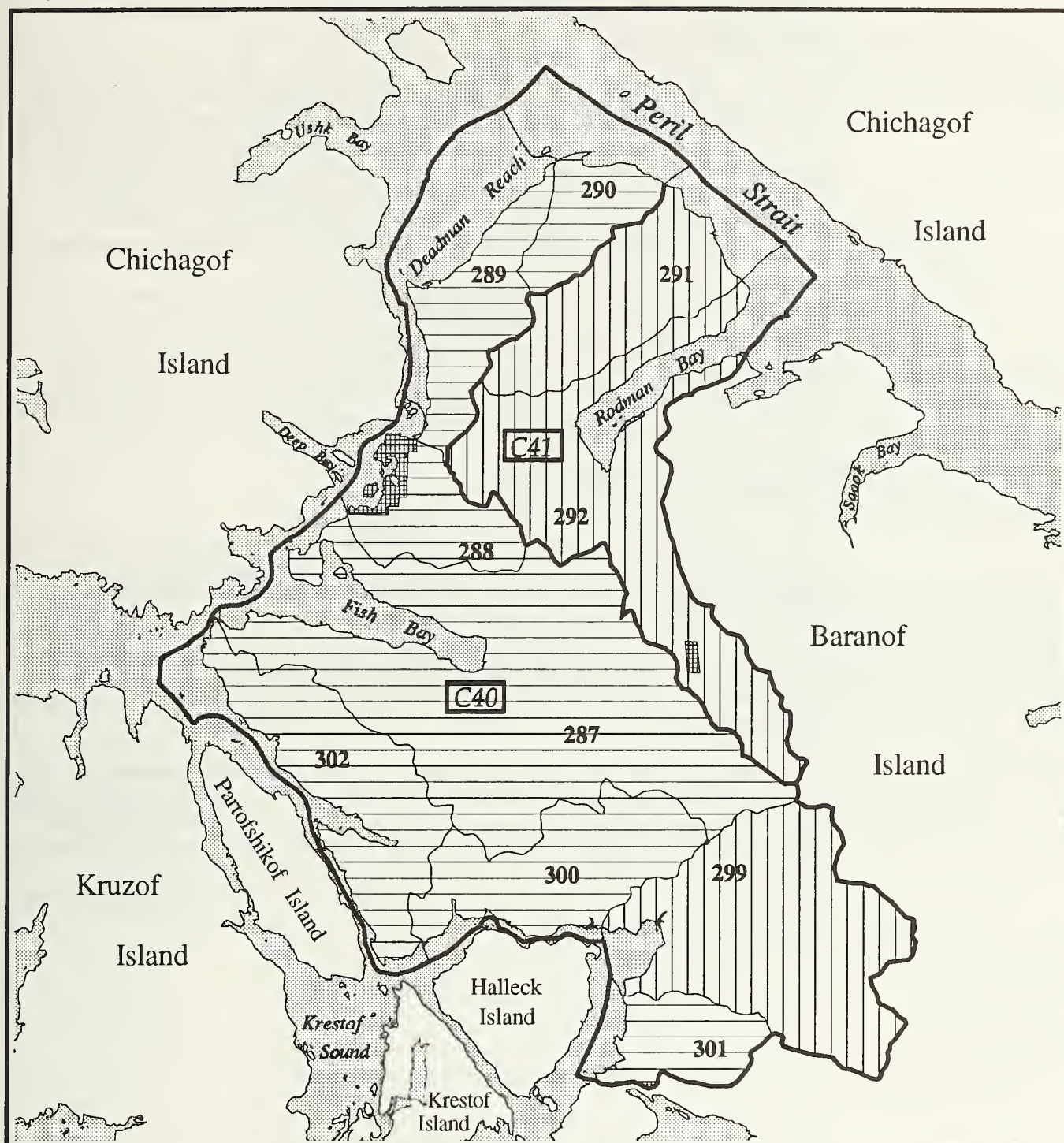
Management Area Direction

The Project Area includes portions of two Management Areas (C40 and C41) (Figure 1-3). The TLMP provides a management direction/emphasis statement for each Management Area. This direction provides information about conditions and intents we should consider in planning for the Management Area. Management direction for Management Areas C40 and C41 is described below:

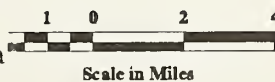
Management Areas C40 and C41

Management Direction/Emphasis - Timber sales will continue to be prepared and offered. Timber stand improvement activities will continue in previously harvested areas. Wildlife habitat improvement opportunities for Sitka black-tailed deer will be emphasized in conjunction with timber stand improvement activities. Opportunities for fishery habitat enhancement include bridge and culvert removal on old road systems. Debris management for fish habitat will be pursued. The reconstruction of Fish Bay Trail No. 477 to the Fish Bay Hot Springs will be studied along with the potential development of a recreation facility at the hot springs (Forest Service 1979).

Figure 1-3
Map of LUDs and Management Areas



- | | | | |
|--|---------------|--|--------------------------|
| | Lud III | | VCU Boundary |
| | Lud IV | | VCU Number |
| | Private Lands | | Management Area Boundary |
| | | | Management Area Number |



How the Northwest Baranof Project Area was Selected

Prior to scheduling the Northwest Baranof Project Area for environmental analysis, the Forest Service analyzed all LUD III and LUD IV lands on the Chatham Area and divided the LUDs into approximately 50 geographic areas. Those 50 areas were then grouped into approximately 18 potential project areas for which timber harvest activities could be proposed and environmental analysis completed. The potential project areas were identified based on common geographic features, past harvest activity, pending legislative action, and estimated available volumes of timber.

The Chatham Area Forest Supervisor selected the Northwest Baranof Project Area for environmental analysis because it contains a sufficient amount of harvestable timber volume on lands designated as LUD III or IV. Therefore he determined that harvest is appropriate under the TLMP (1979, as amended). Available information indicates that harvest of the amount of timber being considered for this project is consistent with the TLMP, standards and guidelines, and other requirements for resource protection.

Scope of the Project

The Forest Service implements National Forest planning at two levels: the program level and the project level. The program level includes Forest Plans, Regional Guides, and other multi-Forest or Regional analysis. The project level includes site-specific analysis such as timber sales and facility construction projects.

We focus project-level planning on implementation of management direction provided by program level decisions. For example, in the case of the Northwest Baranof Project, the TLMP and the Alaska Regional Guide provide management direction.

The Northwest Baranof Project is a project-level analysis designed to implement management direction contained in the TLMP, as amended. As a result, the scope of this EIS is limited to project-specific issues, actions, alternatives, and impacts. We will not attempt to address or analyze decisions or issues associated with higher level planning and direction such as the TLMP or the Alaska Regional Guide.

Desired Condition

The desired conditions described here are written as if they already exist. This is what we want to be saying about the Northwest Baranof Project Area 50 years from now.

Implementation of a Forest Plan begins with the identification of both the existing condition and the desired condition of the National Forest within a project area. The next step is to compare the existing condition (described in Chapter 3) to the desired condition and to identify opportunities for change. This leads to the development of a purpose and need for the project.

The identification of the desired condition is a component of ecosystem management (see discussion of ecosystem management in Chapter 2). We are asked to focus our management actions in such a manner as to achieve desired conditions of the land, always seeking to balance goals for the land with goals for the people (Robertson 1992a). We can use desired conditions as a basis for decisions which provide for all species rather than focusing on the means to get there, or on a single species (Robertson 1992b).

The desired condition for the Project Area is based on management direction contained in the TLMP, as amended, and in the Alaska Regional Guide. This desired condition is a vision of what the landscape will be like in the future. It describes the physical, biological, economic, and social characteristics of the Project Area approximately 50 years from now. We developed desired condition statements for all major physical, biological, and human resources within or dependent on the Project Area. We designed these statements at a scale to be specific enough to meet Forest Plan direction, but flexible enough to provide some space for future management decisions.

The overall desired condition for the Project Area is a long-term, beneficial interaction between people, their needs, and the environment. Ecological systems are sustained or manipulated to provide for long-term human needs. These needs include the traditional harvest of fish, wildlife, and other subsistence resources; the continued harvest of trees for a variety of wood products; and the opportunity for a quality scenic and recreational experience.

The desired condition for the Project Area is described in three parts: the physical and biological environment, the on-site human environment, and the off-site human environment. In each case, we describe how the Project Area and the affected environment will look in approximately 50 years.

Physical and Biological Environment

Geology, Topography, Climate, Soil, and Water - The ecological condition and processes within the Project Area are dominated by geology, topography, and climate. The rugged and steep topography, low temperatures, and high rainfall strongly influence soils, water, and vegetation. The maintenance of soil productivity and stability, and the protection of water quality and fish habitat continue to be a primary consideration for management of the Project Area. Although management activities in the area may have small, isolated, short-term negative impacts on soils and water, cumulative and long-term effects are limited.

Vegetation - The vegetation of the Project Area is a mosaic of forest and nonforest plant communities. This includes managed and unmanaged timber stands and diverse forest age structures. This mosaic is similar to what has existed since timber was first harvested

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in the mid-twentieth century, with coniferous forests interspersed with nonforest plant communities including alpine, muskeg, shrubland, and estuaries. There are areas which are maintained in their natural state with natural ecological processes the dominant agent of change. There are also areas where timber harvests occur that result in both even- and uneven-aged stands. Finally there are areas with maturing, second-growth forests which are a result of clearcutting, overstory removal, and seed tree cutting that has taken place.

Fish and Wildlife - Within the Project Area, wildlife habitat diversity has not changed substantially for 50 years. Areas which have been harvested in the past have proceeded through subsequent successional stages. These changes have resulted in a mosaic of wildlife habitats across the landscape. Because of this, the number of wildlife species in the area are the same, although the size of individual populations may fluctuate from year to year. Monitoring of fish and wildlife populations and habitats continues to assess population viability and wildlife species diversity. Cooperation between State and Federal agencies helps to ensure comprehensive management strategies.

Marine Environment - Surrounding the Project Area lies an environment that is both highly productive and important to the people who live in or visit Southeast Alaska. This marine environment includes the saltwater and intertidal areas and is cooperatively managed with the State of Alaska and other Federal agencies. The protection of marine resources continues to be a high priority for all management agencies. Although development does take place within the marine environment, any impacts are minimal.

On-site Human Environment

The desired conditions described here are written as if they already exist. This is what we want to be saying about the Northwest Baranof Project Area 50 years from now.

Silviculture and Timber Management - The Project Area (with the exception of VCUs 291, 292 and 299) is managed for a variety of uses, with the emphasis on managing for both amenity- and commodity-oriented uses in a compatible manner. As a result, potential timber yields are reduced to protect important biological and social values. Timber harvest activities include both even-aged and uneven-aged silvicultural systems. Along the Alaska Marine Highway System ferry route, scenic values are important and timber management reflects those values. Silvicultural prescriptions recognize the effects of color, tone, texture, line, slope, size, and edge on scenic values. Elsewhere in the Project Area, silvicultural prescriptions are developed that meet scenic, vegetative, wildlife, and timber objectives.

Within the three VCUs allocated to LUD IV (VCUs 291, 292, and 299), there are opportunities for intensive development of resources. Here emphasis is primarily on timber production along with the necessary mitigation measures to protect key biological and aesthetic values.

Hunting, Fishing, and Subsistence - The use of the Project Area for hunting, fishing, and subsistence continues to play an important role in management for the area. Maintenance of some logging roads for ongoing small-scale logging operations permits greater access to the interior of the Project Area. This disperses hunting, fishing, and subsistence use to some extent. Much of the Project Area continues to be managed in a near natural state with corresponding hunting, fishing, and subsistence opportunities and experiences. There are also areas where timber harvests and other activities modified wildlife habitat, and as a result, the opportunities and experiences provided. Hunting and fishing success

and the availability of subsistence resources remain relatively constant over time with only periodic short-term fluctuations.

Recreation and Scenic Quality - The recreation opportunities and the scenic quality of the Project Area have increased in importance over the last 50 years. Access for recreation is by boat and floatplane. The entire Project Area is managed for dispersed recreation, with access to the interior by a combination of foot and off-road vehicle (ORV) travel. The scenic quality of the area is important, as marine-based tourism increases. The area forms a scenic backdrop for views from the Alaska Marine Highway ferries and small cruise ships that travel the Inside Passage and Peril Strait.

The desired conditions described here are written as if they already exist. This is what we want to be saying about the Northwest Baranof Project Area 50 years from now.

The effects of past and present management activities are readily apparent from many locations within the Project Area. Timber harvest, road construction, and other activities have resulted in a mosaic of vegetative patterns, colors, and textures. The Project Area also provides a recreation setting for thousands of marine travelers and other recreationists along the straits and bays that border the area. Some of these travelers anchor and go ashore; others appreciate the scenic quality as they pass by the Project Area.

Heritage Resources - Opportunities to identify, evaluate, preserve, protect, and interpret heritage resources in the Project Area have increased. Working with local Native organizations and governments, the State of Alaska, other Federal agencies, and interested groups and individuals, the Forest Service has developed a better understanding of the history of the Project Area. In cooperation with interested groups like the Sitka Tribe of Alaska (STA), the Forest Service has identified significant cultural properties. Sites are interpreted, and the Forest Service shares responsibility in promoting awareness of the local heritage.

Lands - Cooperation with other land owners, other governments, and people using the National Forests has resulted in an increase in the number of permits, agreements, and cooperative activities. These agreements and activities not only meet the needs of the public, but also meet the intent of the management direction for affected sites within the Project Area.

Transportation System - Access both to and within the Project Area has not changed significantly in 50 years. Access is primarily by saltwater with travel to the interior by foot and ORV travel. There is short-term access to the interior as a result of management activities within the Project Area. For example, in areas where timber harvest activities are taking place, temporary or short-term roads may be constructed and maintained. If subsequent activities are scheduled for an area, permanent roads may be constructed and maintained. In addition, road management objectives for the area include roads closed to motor vehicle travel and roads managed for recreational ORV use.

Facilities - The facilities provided within the Project Area, both for administrative activities and for visitors, have increased over 50 years. The number and variety of recreation facilities have seen the greatest increase. Emergency shelters have been constructed in remote coastal locations. There are additional recreation cabins along the coast and within the interior of the Project Area. These cabins are located in areas of scenic and recreational value and are associated with other recreational opportunities such as fishing, hunting, and hiking. Recreation trails have been constructed and are

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maintained within the Project Area. Other facilities within the Project Area are short-term in duration and associated with specific management activities, such as LTFs, logging camps, and administrative cabins.

Off-site Human Environment

The desired conditions described here are written as if they already exist. This is what we want to be saying about the Northwest Baranof Project Area 50 years from now.

Southeast Alaska Economics - The Project Area continues to contribute positively to the economy of Southeast Alaska. It provides resources for three major industries in the region: timber and wood products, commercial fishing and seafood processing, and recreation and tourism. These industries, although changed over time, are major contributors to the economy of Southeast Alaska.

Sitka Economics - The Project Area continues to contribute substantially to the economy of Sitka. The land and the waterways between Sitka and Chatham Strait continue to be important for subsistence use and have become increasingly important over time as a resource base for local components of the three major industries: timber and wood products, commercial fishing and seafood processing, and recreation and tourism. In addition, Peril Strait, Neva Strait, and Olga Strait continue to be a major transportation corridor leading to Sitka.

The commercial fishing and seafood processing industry as well as the recreation and tourism industry continue to thrive in Sitka, and some components have seen substantial growth. Employment, income, and local revenues from these two industries are a large contributor to the local economy. The timber and wood processing industry has been transformed into one where the timber resources of the Project Area are processed primarily in Sitka for lumber, firewood, and other locally manufactured wood products.

Personal Economics - The resources of the Project Area continue to provide opportunities for individuals to derive employment and personal income. This includes opportunities for employment in timber and seafood harvesting and/or in the recreation and tourism industry. The proximity to Sitka provides many residents the opportunity to pursue traditional subsistence activities. As a result, the personal income (both monetary and non-monetary) of the residents of Sitka continues to be well above the national average.

Community Values - Although there have been many changes in Sitka during the past 50 years, most of the characteristics and values of the community have remained the same. A major factor in this stability is the relatively isolated nature of the community. Sitka is still accessed exclusively by aircraft or boat. This relative degree of remoteness, combined with the considerable scenic and recreational opportunities and the availability of abundant natural resources, continues to be a major influence on Sitka and its residents.

Many residents still attribute considerable value to the rugged and independent characteristics required to live in a small Southeast Alaskan community and to the subsistence lifestyle that accompanies it. Native Americans also use the Project Area for subsistence and for customary and traditional gathering. This serves to keep their culture alive and connected to the present. Residents still agree that the quality of life outweighs the disadvantages of seasonal employment, cost of importing goods and services, limited access, and rainy weather. These characteristics and values continue to play a major role in the cohesion and stability exhibited by the community of Sitka.

Landscape Objectives

As stated in the previous section, we designed the desired condition statements at a scale to be specific enough to meet Forest Plan direction, but flexible enough to provide some space for future management decisions. These statements provide a vision of what the landscape will be like in the future, but do not necessarily provide guidance of how to achieve this future condition. As a result, it may be necessary to develop additional guidance for project planning that give specific objectives for management activities.

For example, the desired condition statements for vegetation, for silviculture and timber management, and for recreation and scenic quality provide a description of the basic characteristics of the forests within the Project Area. However, they do not provide specific objectives for timber management. Consequently we developed the following landscape objectives for timber management.

VCUs 289, 290, 299, 300, 301, and 302 - All areas provide for a variety of horizontal and vertical forest structure across the landscape. Minimize negative visual impacts.

VCUs 287, and 288 - Areas of high recreation and scenic quality (e.g. near Schulze Cove) maintain a moderate to high level of canopy, and minimize negative visual impacts. Other areas provide for a variety of horizontal and vertical forest structure across the landscape, and minimize negative visual impacts.

VCUs 291, and 292 - Areas of previous timber harvest (e.g. Adams Creek, Duffield Creek, and Rodman Creek) maintain a moderate to high level of canopy retention. Areas along the northwest shore of Rodman Bay maintain a moderate to high level of canopy retention in areas of high recreation and scenic quality, wildlife travel corridors between the beach and the alpine area, and minimize negative visual impacts. Areas along the southeast shore of Rodman Bay maintain a moderate to high level of canopy retention wherever possible in areas of high recreation and scenic quality, and minimize negative visual impacts. Other areas maintain of variety of horizontal and vertical forest structure across the landscape.

Public Involvement

The National Environmental Policy Act of 1969 (as amended) (NEPA) requires agencies to encourage and facilitate public involvement in decisions which affect the quality of the human environment. To that purpose, we have made a diligent effort to involve the public in the Northwest Baranof Project. This has included legal notices, scoping documents, display ads in the *Daily Sitka Sentinel*, public meetings, and other formal and informal public contacts. We continued that effort with the release of the Draft EIS, the subsequent public comment period, and the subsistence hearings.

The NEPA also states that there shall be an early and open process for determining the scope of issues to be addressed and for determining the significant issues related to the proposed action. It refers to this process as "scoping." We published our notice of intent (NOI) to initiate the project in the *Daily Sitka Sentinel* and the *Federal Register* in July 1993. This was followed by a period of scoping. We reviewed our proposed action and project schedule and then published a revised NOI in August 1994. Another round of scoping followed. We published and distributed documents describing the project during the two scoping periods. We held public meetings in Sitka and Angoon during scoping and solicited information from the public. During these scoping periods we invited the participation of affected Federal, State, and local agencies, Federally recognized Indian Tribes, and other interested groups and individuals. A major component of the scoping process was to determine the significant issues to analyze in depth in the EIS. These issues are described in the following section. We encouraged interested members of the public to contact us if they had any questions about the project or the planning process.

After scoping was completed, a group (called Friends of Southeast's Future) formed in Sitka that expressed opposition to clearcutting in the vicinity of Sitka. They circulated a petition, met with the City and Borough Assembly, held public meetings, and sponsored a proposition to oppose clearcutting in the Sitka area. The Forest Service has also met both informally and formally with members of this group.

In August of 1995 the Draft EIS was released and a 59-day comment period followed. Open houses, subsistence hearings, and other public contact occurred during the comment period. We received 83 written comments on the Draft EIS and 24 people provided testimony for the subsistence hearings.

Public involvement has been instrumental in identifying issues and formulating alternatives. Appendix I contains details of the public involvement process for Northwest Baranof. A summary of the significant issues used to govern the interdisciplinary analysis is provided later in this document, and the issues are addressed in Chapters 1 and 2 of the Final EIS.

Contacts with the Sitka Tribe of Alaska

On May 15, 1992, the Forest Service and the Sitka Tribe of Alaska (STA) entered into a Memorandum of Understanding (MOU) "...to establish a framework for cooperative relationships between the Forest Service and the Sitka Tribe of Alaska for carrying out the unique relationship and obligations the United States Government has with Indian Tribal

Governments. This shall serve as a vehicle through which the Forest Service maintains a legal and political relationship with the local tribal government in Sitka.” In keeping with the spirit of this MOU, the ID Team has made a diligent effort to maintain and strengthen the Forest Service’s working relationship with STA throughout planning for this Project. A partial list of contacts with STA is included in Appendix J.

Issues To Be Addressed

The NEPA requires Federal agencies to determine the scope of the issues to be addressed and to identify the significant issues related to the proposed action. For the Northwest Baranof Project, these issues were identified through the scoping process described in the previous section. Issues were raised by the public, which included individuals; organizations; other Federal, State, and local agencies; and affected Indian Tribes. Some of these issues were identified through scoping within the Forest Service and relate to concerns about specific resources and legal requirements.

We analyzed the issues raised during scoping and grouped similar issues when appropriate. We determined the following issues to be significant and within the scope of the project. In formulating alternatives we considered each of the issues and addressed them in some manner in all alternatives. We considered two additional issues but eliminated them from detailed study because their resolution falls outside the scope of the Northwest Baranof Project (see next section for a discussion of these issues).

Fish Habitat and Water Quality

The fish habitat and water quality of the streams on the Tongass National Forest contribute to the economic, recreational, and subsistence needs of Southeast Alaska residents. Stream habitat provides important shelter, hiding places, food, and rearing areas for salmon. Changes in stream habitat due to logging or road construction could alter a stream's ability to produce fish.

Past logging has adversely affected fish habitat in some rivers and streams north of Sitka. The streams within the Project Area support many salmon. Maintaining, enhancing, and rehabilitating fish habitat are important concerns for many Sitka residents.

Wildlife Habitat and Populations

The Project Area supports a wide variety of wildlife species. Two species of particular concern are Sitka black-tailed deer and mountain goat. A stable, huntable population of deer is important for many Sitka residents. The maintenance of adequate deer winter range is critical for deer survival. Logging may reduce available winter habitat for deer and may contribute to reduced deer populations in some areas over the long term. Increased access to goat winter range at the headwaters of Noxon Creek and Nakwasina River as a result of additional road construction could cause increased hunting of the goat herd.

Old Growth

Old-growth forests are valuable because of their biological diversity, wildlife habitat, recreation opportunities, scenic quality, soil productivity, and water quality. These forests are also a source of high-quality timber. Balancing these important but conflicting values of old-growth forests is an important and difficult management problem. In addition, fragmentation of isolated old-growth forest tracts caused by natural conditions and logging activities, the size of old-growth patches, and the corridors that connect old-growth patches, are important factors in managing wildlife habitats and for biological diversity. Old-growth fragmentation due to road construction and logging is a concern.

Marine Environment

Marine fish and shellfish productivity may be affected by the location and design of LTFs and log storage areas, and by bark accumulations that may occur as a result of their use. A specific concern is the possible adverse effect of the proposed LTF in St. John Baptist Bay on the juvenile sablefish population that lives there. In addition, the proposed LTFs in Nakwasina Passage and Sound may adversely affect crabbing in those areas.

Marine mammal populations may be affected by the location of LTFs and the activity associated with logging and log transportation. For example, a seal haul-out near the proposed LTF at Noxon Creek may be affected.

Subsistence

Maintaining subsistence opportunities on Baranof Island is of concern to many rural residents. This area is used for hunting, trapping, fishing, gathering, and other customary and traditional use. Subsistence supplements the diets of many people and is the primary source of food for some. For Native Americans in Southeast Alaska, subsistence resources are important for the preservation of cultural customs and traditions. The subsistence lifestyle involves deeply-held values, attitudes, and beliefs of both Native and non-Native people.

The location and size of logging camps are of concern because of the potential for increased competition for subsistence resource for the duration of their use. In addition, access provided by logging roads may increase competition with Sitka residents for hunting, trapping, fishing, and gathering.

Recreation

Outdoor recreation opportunities are important to the quality of life for many Southeast Alaska residents. Dense rain forests, abundant fish and wildlife, and miles of protected waterway combined with the vast and remote character of the area provide a unique setting for quality recreation experiences. Logging, road construction, and related activities will alter some recreational settings for the short term and the long term.

The lack of roads and the necessity for access from saltwater provide a unique recreational setting appreciated by visitors and residents alike. Difficult terrain, dense vegetation, and limited anchorages confine many recreational activities to accessible shorelines. LTFs, log storage areas, and logging camps located in these popular areas may displace recreational use during logging. Popular areas that could be affected include Schulze Cove, St. John Baptist Bay, and Nakwasina Passage.

Road construction and reconstruction have the potential for opening new areas for road-related recreation. Management objectives for roads after logging will determine if access is to be maintained for short term or long term. Although some people desire additional motorized recreational opportunities, others may oppose opening more areas to motorized use.

1 Purpose and Need

Scenic Quality

Travelers along the route of the Alaska Marine Highway view dense spruce and hemlock rain forests, abundant fish and wildlife, rugged mountains, secluded fjords and bays, and miles of protected waterways. The unique natural setting and outstanding scenery are an important component of the visitors' experience. Tourism has diversified the economy of Sitka, and maintaining the scenic quality of the landscape is of concern to both visitors and the community. Timber harvest has the potential for affecting the scenery along the Alaska Marine Highway route.

Many people have chosen to live in or visit Sitka because of the opportunity to work or play in an area with outstanding scenic quality. Fish Bay, St. John Baptist Bay, Nakwasina Passage, and Nakwasina Sound provide many opportunities for saltwater recreation and small boat travel. Harvest units, roads, and LTFs may have an adverse affect on the scenery in these areas.

Economic and Social Quality

The lifestyles, values, and quality of life for the residents of Southeast Alaska are highly dependent on the surrounding National Forest. The forests of the Project Area provide a valuable setting for recreation, hunting, fishing, and subsistence use. They also provide a setting for people seeking a remote, uncrowded living condition and for Native residents seeking to maintain customary and traditional uses. Timber harvests and road construction may have an adverse affect on the quality of life for some people.

The forests of the Project Area are also an economic resource for Southeast Alaska and the community of Sitka. They are valuable as a setting for commercial recreation and tourism, and the streams provide spawning habitat for salmon, a resource for a large commercial fishing industry. There is concern that widespread timber harvest and road construction would have an adverse affect on these important industries.

Furthermore, the forests provide valuable timber that may be used to support a wood products industry. Currently, there is not a major wood processing industry in Sitka, and many residents oppose clearcut logging in the Sitka area. However, there is also a strong interest in establishing a small wood products industry for the Sitka area. On a larger scale, logging provides jobs for many workers in Southeast Alaska. Timber harvested in the forests around Sitka may be processed at many sites in Southeast Alaska to meet local, national, and international demand for wood products. The closure of the Sitka pulp mill contributed to a shortage of easily accessible firewood for Sitka. This may result in increased demand for free use or commercial timber harvest.

The amount of timber to be harvested and its value compared to logging costs is a concern. This is particularly true if small amounts of timber are to be harvested with expensive roads or yarding systems. Furthermore, the communities of Southeast Alaska receive payments from the Forest Service in lieu of taxes for income generated from the National Forest. The primary source of these payments has been timber sales. As timber harvests decrease, the payments in lieu of taxes may also decrease.

Heritage Resources

The Project Area lies largely within an area traditionally claimed by the Sitka Tlingit. Because of the importance of this area in preserving the Tlingit culture and traditional values, the Forest Service has worked closely with the Sitka Tribe of Alaska to identify sites of cultural importance. Once identified, the Forest Service can protect these sites by avoiding them when planning and implementing management activities.

Furthermore, the National Historic Preservation Act (NHPA) directs Federal agencies to take into account the effect of proposed actions on historic properties. Historic properties are those properties included in or eligible for inclusion in the National Register of Historic Places. Federal regulations also require a "Section 106 review" for proposed actions. In response to this issue, we have completed the NHPA Section 106 review for all timber harvest related activities proposed by the action alternatives. This included units, roads, and LTFs. As a result of this review we have avoided all known heritage resource sites in the Project Area or otherwise specified stipulations to protect them.

Issues Eliminated from Detailed Study

The NEPA also requires us to "identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review." The following issues were raised during scoping, but are beyond the scope of this project.

Forest Plan Revision

It was suggested that planning for this Project cease until the TLMP Revision is complete. Until a new Record of Decision (ROD) for the TLMP is signed, the current TLMP (1979, as amended) remains in effect. We have closely adhered to current TLMP direction and Regional Best Management Practices (BMPs) in developing this EIS. Comments regarding the general management direction of the Tongass National Forest, LUDs, or procedural issues are beyond the scope of this Project. These comments can be directed to the USDA Forest Service through the currently ongoing TLMP Revision Process. Write to: Tongass Land Management Planning Team, 8465 Old Dairy Road, Juneau, Alaska 99801.

No Clearcutting

During public scoping, it was suggested that no clearcutting be planned for the Northwest Baranof Project. The concern was focused on the effect of clearcutting on scenic quality, fish, wildlife, recreation, and tourism. After scoping was completed, clearcutting was again raised as an issue by some members of the community of Sitka. Considerable public discussion of clearcutting occurred throughout 1995. This discussion, including consideration of a ballot proposition on clearcutting within the City and Borough of Sitka, indicates that this is still an issue for the community of Sitka.

The application of the clearcutting silvicultural system to the forests of Southeast Alaska is guided by laws, regulations, and policies, as well as the capabilities of the forests and their environment. We limit clearcutting to areas where it is essential to meet Forest Plan objectives; to minimize the occurrence of disease infestations, windthrow, or logging damage; and to provide for the establishment and growth of desired trees that are shade intolerant. Eliminating clearcutting as a harvest option would severely limit the ability to

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meet Forest Plan objectives and to manage for spruce regeneration. As a result, the issue of “no clearcutting” is beyond the scope of this project.

Permits and Licenses

To proceed with the timber harvest as addressed in this EIS, we must obtain various permits from other agencies. Administrative actions on these permits would take place after this EIS is filed with the Environmental Protection Agency (EPA) and not sooner than 50 days following publication in the *Daily Sitka Sentinel* of notice of this decision. The agencies and their responsibilities are listed below.

U. S. Army Corps of Engineers

- Approval of discharge of dredged or fill material into waters of the United States (Section 404 of the Clean Water Act of 1977, as amended)
- Approval of construction of structures or work in navigable waters of the United States (Section 10 of the Rivers and Harbors Act of 1899).

U. S. Environmental Protection Agency

- National Pollutant Discharge Elimination Systems Review (Section 402 of the Clean Water Act)

State of Alaska, Department of Natural Resources

- Authorization for occupancy and use of tidelands and submerged lands.

State of Alaska, Department of Environmental Conservation

- Solid Waste Disposal Permit (Section 402 of the Clean Water Act)
- Certificate of Reasonable Assurance (Section 401 of the Clean Water Act) which certifies compliance with Alaska Water Quality Standards (Section 401 Certification)

U. S. Coast Guard

- Coast Guard Bridge Permit (in accordance with the General Bridge Act of 1946) required for all structures constructed across navigable waters of the United States.

Legislation Related to This EIS

Several laws and regulations pertaining to management of Federal lands were previously mentioned in this chapter. In addition to those mentioned, the following laws are relevant to the preparation of EISs for actions on Federal lands. Some of these laws are specific to Alaska, while others pertain to all Federal lands.

- Bald and Golden Eagle Protection Act, USC 668 (1940 as amended)
- Multiple-Use Sustained Yield Act of 1960
- Administrative Procedure Act, 1966
- National Historic Preservation Act of 1966
- Clean Air Act of 1970 (as amended)
- Marine Mammal Protection Act of 1972
- Endangered Species Act of 1973 (as amended)
- Forest and Rangeland Renewable Resources Planning Act of 1974 (as amended)
- Cave Resource Protection Act of 1988
- Executive Order 11988 (floodplains)
- Executive Order 11990 (wetlands)

In addition, the Coastal Zone Management Act (CZMA) pertains to the preparation of the EIS. This act, passed by Congress in 1976 and amended in 1990, requires Federal agencies conducting activities or undertaking development affecting the coastal zone to ensure that proposed developments are consistent with enforceable policies of approved State coastal management programs to the maximum extent practicable. The State of Alaska passed the Alaska Coastal Management Act (AS46.40) in 1977. It contains the standards and criteria for determining the consistency of activities within the coastal zone.

The Forest Service has evaluated the alternatives to ensure that the activities and developments being proposed are consistent with approved coastal management programs to the maximum extent practicable. The results of this determination are presented in the Other Environmental Consequences section at the end of Chapter 4.

Reduction of Paperwork and Availability of the Planning Record

An important consideration in preparation of this EIS has been reduction of paperwork as specified in 40 CFR 1500.4. In general, the objective is to furnish enough site-specific information to demonstrate a reasoned consideration of the environmental impacts of the alternatives and how these impacts can be mitigated.

The Planning Record is available at the Forest Supervisor's Office, 204 Siginaka Way, Sitka, Alaska. The proposed alternatives were field verified and the planning record contains this site-specific detail. Other reference documents such as the TLMP (as amended 1979), the TTRA, the Resources Planning Act, and the Alaska Regional Guide EIS, are available at public libraries around the region as well as at the Supervisor's Office in Sitka.

This EIS is "tiered" to the TLMP EIS 1979, as amended. It also tiers to the Alaska Regional Guide EIS, 1983. Relevant discussions from these documents and the administrative planning record (see Literature Cited section) are incorporated by reference rather than repeated (40 CFR 1502.21).

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Chapter 2

Alternatives Including the Proposed Action

Chapter 2 describes the proposed action and alternatives to the proposed action. This chapter also explains how we developed alternatives that respond to the issues described in Chapter 1, and discusses alternatives considered but eliminated from detailed study. Also in this chapter are a comparison of alternatives and discussions of actions common to all alternatives, enhancement opportunities, mitigation measures, and monitoring.

This chapter contains the key elements needed by the decision maker. It describes the alternatives and compares them based on the information and analysis in Chapters 3 and 4. These later chapters contain the detailed scientific basis for establishing a baseline and measuring the environmental consequences for each of the alternatives. For a full understanding of the alternatives and the analysis, consider the alternative maps, the details included in Chapters 1 through 4 of the EIS, and the Appendices.

Ecosystem Management

On June 4, 1992, shortly after the Northwest Baranof Project was initiated, the Chief of the Forest Service announced that the Forest Service was committed to using an ecological approach in the future management of the National Forests (Robertson 1992) known as ecosystem management. Ecosystem management is a concept of natural resource management wherein management activities are considered within the context of biological, physical, economic, and social interactions within a defined area or region over both the short and long term. This is a logical extension of activities that have already been taking place in land and resource management planning. The National Environmental Policy Act of 1969 (NEPA) requires agencies to “utilize a systematic, interdisciplinary process which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision making which may have an impact on man’s environment.”

Ecosystem management requires the skillful, integrated use of ecological knowledge at various scales to produce desired resource values, products, services, and conditions in ways that also sustain the diversity and productivity of the ecosystems being managed. Ecosystem management is not an end in itself. It is the means to meet society’s needs in ways that also restore and sustain healthy, diverse, and productive ecosystems. We do not manage ecosystems to preserve some intrinsic values or solely to imitate conditions that occurred at some time in the past. We manage them for specific purposes such as producing, restoring, or sustaining certain ecological conditions; for desired resource uses and products; and for aesthetic, cultural, or spiritual values. These are the needs and desires of the public as communicated to us through social, economic, and political

2 Alternatives Including the Proposed Action

systems. The land and resource management planning process and the implementation of Forest Plans are where it all comes together (Robertson 1992).

For the Northwest Baranof Project we have identified a number of specific actions that we could take to apply ecosystem management techniques. We used these actions as a framework to develop the proposed action and alternatives. This framework helped limit the range of alternatives we developed to only those that would best sustain the diversity and productivity of the ecosystems we are managing. Four of these actions are listed below.

- alternative harvest methods
- viable wildlife populations
- beach and estuary fringe, and
- interdisciplinary analysis

These actions are described in detail on the following pages.

Alternative Harvest Methods

Within the Project Area we attempted, where possible, to apply management activities which “mimic” natural disturbance patterns (such as landslides, blowdown, etc.). We expect that the maintenance of natural disturbance patterns would likely achieve the goal of sustaining ecosystems. Silviculturists attempted to identify the natural disturbance patterns occurring on the landscape. They then suggested harvest methods for timber harvest which mimic those disturbance patterns, while meeting the other resource and management objectives for the Project Area.

Within the Project Area, all proposed harvest units were visited to determine existing stand health and structure. Disturbance patterns were also noted during these visits. Based on the results of these site visits and the analysis of data gathered during the visits, four harvest methods were developed: clearcut with reserve trees, seed tree cut, overstory removal, and group selection. Descriptions of each harvest method follows.

Clearcut With Reserve Trees

Clearcut harvest removes all of the trees on a given area, usually followed by natural regeneration. Clearcutting maximizes timber production in the most economical fashion. Clearcut harvest is also recommended for management of certain insects and diseases. In addition, it is recommended for areas of high windthrow potential.

The clearcut with reserves harvest method retains snags and green replacement trees and results in conditions similar to those found after a large, intense wind event. Clearcutting with reserve trees enables near maximum timber production with provisions made for maintaining some habitat for cavity-dependent wildlife. Two to six trees per acre are retained. Reserve trees may be uniformly scattered across the unit, clumped into small groups of trees, or placed around the edges of the unit, depending on the type of yarding equipment used.

Seed Tree Cut

Seed tree cuts are proposed in the Northwest Baranof Project to encourage regeneration of yellow cedar and to retain the diversity of tree species in the stand. Natural regeneration of yellow cedar following clearcutting has generally not been successful on the Chatham Area. Seed trees could be left in small groups or scattered uniformly across the unit. Yellow cedar of seed-bearing age and sufficient size and distribution to adequately meet the stocking requirements following harvest may be selected as seed trees. Whenever possible, these selected trees have large, healthy crowns. The distribution of cedar suitable for seed trees, topography, and type of yarding equipment will dictate the arrangement of trees to be left (6-12 trees per acre). These trees would be left standing to add future structural diversity to the stand.

The forest structure resulting from a seed tree cut would mimic an intense wind disturbance event on the landscape. Following such an event in an area with a large proportion of the overstory trees being cedar, one would expect varying amounts of yellow cedar to remain standing, due to their branching and foliage patterns promoting windfirmness when compared with other tree species. Often, the larger, well-established cedar will remain following such a disturbance; these characteristics are also desirable in selecting cedar seed trees.

Overstory Removal

Overstory removal is new to Southeast Alaska and has not been done on the Chatham Area. It is proposed in the Project Area to minimize impacts to visual and soil resources and to use previously-established advance regeneration to gain added stand structure and diversity. Overstory removal maintains a larger number of trees than the seed tree cut (20 - 60 percent of the existing trees are removed from the stand). This type of regeneration method would best mimic a natural wind disturbance which left a significant portion of the midstory and understory trees, while removing most of the larger overstory trees. Important old-growth attributes (significant numbers of large trees, snags, and large down woody material) can be retained. Reserve trees may be regularly spaced or grouped to meet treatment objectives. Figures 2-2 and 2-3 illustrate the structure and composition which could be left with the overstory removal harvest method.

Following overstory removal, the managed stand structure may be two- or three-storied, depending on the existing stand conditions and marking prescription. Many old-growth stands typically contain an overstory layer of dominant and/or codominant trees 200-250+ years old with an intermediate layer of 80-150 year old shade-tolerant species. Understory layers may contain layers of pole-size trees 40-80 years old, with layers of saplings and seedlings usually present at varying levels of stocking. Advance regeneration tends to be species of intermediate or high shade tolerance. The growth of the advance regeneration would likely be reduced in proportion to the amount of shade present following overstory removal, by an as yet undetermined amount, when compared to advance regeneration released following a clearcut (USDA Forest Service 1993). Most stands considered for overstory removal in the Project Area have a well-stocked understory of advance regeneration which is anticipated to release following overstory removal. Overstory removal allows for a range of moderate to heavy forest retention. Techniques for determining which trees to harvest include using diameter

2 Alternatives Including the Proposed Action

limits, where all trees over or under a specified diameter are retained, or by establishing a desired volume per acre to be retained.

Group Selection

Group selection is an uneven-aged management technique. Groups of trees ranging from 0.5 to 2 acres in size are removed across the unit. These groups create gaps in the stand canopy which then facilitate natural regeneration. Systematic harvest entries, referred to as "cutting cycles," are made at regular intervals, such as every 40-50 years. Each cutting cycle will remove approximately 20 percent of the trees in the stand. Thus, five cutting cycles will be needed to harvest the entire original stand. Removal of the original stand would occur over approximately 160-200 years, depending on the time interval chosen (40 or 50 years). This would result in a variety of age classes and size classes present across the unit through time.

Group selection mimics wind disturbance patterns occurring across much of the Project Area. Small-scale, frequent wind disturbances often result in small patches of trees being blown over, creating gaps in the stand canopy. As group selection is implemented over time, a diverse, multilayered canopy is produced. These different canopy layers remain in distinct small areas rather than interspersed across the entire area.

Because of the large amount of shade present throughout the stand, shade-tolerant species tend to be favored during regeneration. Intermediate shade-tolerant species, such as Sitka spruce and yellow cedar, are expected to be present, although in lower amounts than in clearcuts or other prescriptions which open the forest floor to more sunlight. The predominant species type would depend on the size of openings created as well as the composition of the surrounding unharvested trees. Reserve trees could be retained within harvested groups to add to vertical and horizontal structure across the stand. This will better mimic the natural horizontal and vertical structure present throughout much of the landscape.

Figure 2-1
Old-growth Structure



Figure 2-2
Overstory Removal
(20% of trees removed)



Figure 2-3
Overstory Removal
(60% of trees removed)



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Viable Wildlife Populations

Managing wildlife habitat to maintain viable populations of all existing native and desired non-native wildlife species is required by the regulations implementing the National Forest Management Act of 1976 (NFMA). It is also necessary to prevent listing of specific wildlife species as threatened or endangered under the Endangered Species Act of 1973.

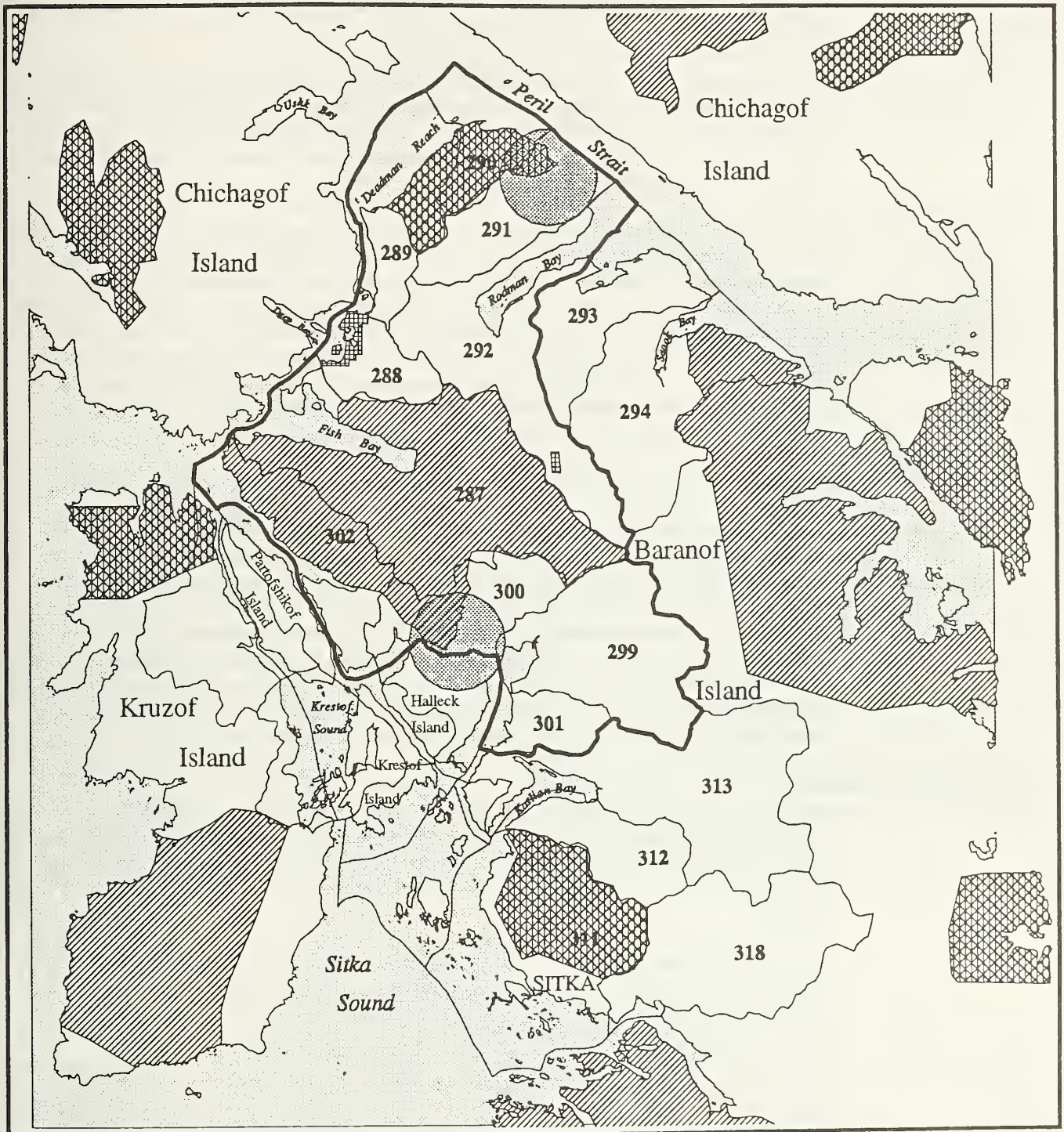
The maintenance of habitats needed for viable populations of old-growth-associated wildlife species on the Tongass National Forest has received considerable attention in recent years. As a part of the ongoing process for revising the Tongass Land Management Plan (TLMP), an interagency committee developed a proposed strategy for maintaining well-distributed, viable populations of wildlife associated with old-growth forests in Southeast Alaska. This strategy recommended the establishment of a network of Habitat Conservation Areas (HCAs) across the Tongass National Forest as well as standards and guidelines for maintaining old-growth habitat. The committee also prepared a mapped example of how this strategy could be applied. Proposed HCAs for the Project Area are displayed in Figure 2-4.

At approximately the same time, interagency studies were underway to gather more information about populations and habitat requirements for the Queen Charlotte goshawk. An interagency Goshawk Workshop held in Juneau on June 6-8, 1994 provided habitat management recommendations for sustaining viable goshawk populations. The recommendation was for commercial timber harvests to be deferred within a two-mile radius of known goshawk nests.

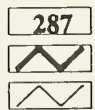
Discussions of these two issues began in 1992 and continued on into 1994. Then on October 11, 1994, the Alaska Region released a draft Environmental Assessment for a proposal to adopt interim guidelines for maintaining wildlife viability. These guidelines deferred harvests of old-growth timber within mapped HCAs and within the two mile buffer around known goshawk nests.

To allow more time for HCA and goshawk options to be considered, we decided to adopt the proposed action as described in the draft Environmental Assessment as a framework for the alternatives developed for the Northwest Baranof Project. None of the alternatives developed for this Project includes timber harvests within the mapped HCAs or within the two-mile buffer around known goshawk nests (displayed in Figure 2-4). Decisions about timber harvest within these areas are deferred until after further analysis. Consistent with current TLMP old-growth habitat "retention" guidelines, old-growth timber in these areas remain as habitat for old-growth-associated wildlife species.

Figure 2-4
Proposed
Habitat Conservation Areas
and Goshawk Buffers



Private Lands
Northern Goshawk
Nest Buffers



287 VCU
Project Area
VCU Boundaries

PROPOSED HABITAT
CONSERVATION AREAS:



Medium HCA
Large HCA

2 Alternatives Including the Proposed Action

Beach and Estuary Fringe

The beach and estuary fringe is one of the most productive areas in Southeast Alaska and includes the vegetated and unvegetated transition zone between the land and saltwater. Approximately 3,211 acres of beach fringe and 3,871 acres of estuary fringe occur in the Project Area. Beach fringe includes areas within 500 feet of saltwater and estuary fringe includes areas within 1,000 feet of an estuary.

These areas provide high-quality habitat for wildlife, including shorebirds, waterfowl, bald eagles, and mammals. Brown bear, river otter, marten, and Sitka black-tailed deer are typical species that concentrate their activities during some or all seasons within the forests in the beach fringe. Beach fringe also provides critical habitat for the Sitka black-tailed deer during periods of deep snow accumulation.

The beach and estuary fringe is noted for its productive stands of old-growth forest. In fact, much of the logging that occurred historically in the Project Area occurred in the beach and estuary fringe. This was due to abundant timber resources within the fringe and limited ability to access interior areas. Tide flats in the beach and estuary fringe have grasses, sedges, and other vegetation which are used as forage by a variety of wildlife. These areas provide habitat for plants on the Alaska Region sensitive species list. The beach and estuary fringe is also valuable for its scenery and as a setting for most of the recreation that occurs within the Project Area. There is also a high concentration of historical and cultural resources located within this fringe.

All of these values could be affected by additional logging activities within the beach fringe. It was for that reason that we decided early in the planning process that these areas would not be proposed for timber harvest as a part of the Northwest Baranof Project. We recognized that there would be some impact to the beach fringe from LTFs, logging camps, and transportation facilities as a result of any proposed activities. We determined that the impacts from these facilities would be limited both in scale and duration, and were an acceptable impact from upland timber management activities. It is important to recognize that although the beach and estuary fringe has not been proposed for timber harvest during the Northwest Baranof Project, this does not remove these areas from consideration for future timber management activities. In fact, there are many future opportunities for small-scale harvest methods within the beach fringe.

Interdisciplinary Analysis

Both NEPA and ecosystem management involve a systematic, interdisciplinary process. We use an integration of ecological knowledge including physical, biological, and social sciences to produce desired resource values, products, services, and conditions. At the same time, we must sustain the health, diversity, and productivity of the ecosystems we manage.

The Interdisciplinary (ID) Team for the Northwest Baranof Project worked together during field reconnaissance, resource inventories, identification of the proposed action, and development of alternatives. In particular, the ID Team process was employed to review proposed timber harvest units and roads. Each potential unit and road was discussed and potential resource concerns were identified. As a result of this process, we eliminated many environmentally sensitive areas (such as high hazard soils, TTRA stream buffers, etc.) from further consideration for timber harvest before we developed alternatives.

Alternative Development

In this EIS, five alternatives explore ways to satisfy public concerns and resolve the issues discussed in Chapter 1. These include a no-action alternative and four action alternatives. Each of the action alternatives responds differently to the issues. The action alternatives were developed as site-specific proposals, the environmental consequence of which could be clearly displayed. Collectively the alternatives were developed to explore ways to consider public concerns and resolve issues, while responding to the purpose and need for the project. From this range of alternatives, the Forest Supervisor has a basis for making an informed decision.

In developing the harvest units and road systems for this Project, we followed direction, standards, and guidelines contained in the current TLMP, Alaska Regional Guide, and applicable Forest Service manuals and handbooks. The first step in formulating alternatives was the development of a logging plan that identified timber harvest units and the associated road systems that could be assigned to any of the alternatives. This unit and road “pool” was carefully examined in the field and reviewed by the ID Team before it was finalized. Next we determined various options to address the issues and identified various approaches or “themes” that could serve to guide the alternatives. After further review, we finalized the alternative themes, assigned specific units and roads to each alternative, and insured that each alternative considered in detail is consistent with the current TLMP. Finally we have identified mitigation measures, enhancement projects, and the monitoring requirements which are listed in Appendix A.

The ID Team looked at the proposed harvest units from two levels: the landscape level, which considers effects of management practices over large areas (such as VCUs, watersheds, or viewsheds); and the stand level, which deals with individual harvest units. At the landscape level, we maintain large tracts of undisturbed old growth by concentrating timber harvest in certain areas, and by using beach and estuary fringe and stream buffers for corridors between old-growth blocks.

At the stand level, we reduced harsh edges by unit placement and feathering edges of cutting units, and provided for stand diversity by leaving snags in harvest units (where safety regulations allow) or retaining small patches of uncut timber in harvest units (where feasible and practical). We considered all of these concepts during the selection and design of individual harvest units and roads, and the assignment of these to specific alternatives.

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Alternatives Eliminated from Detailed Study

Three alternatives were considered during the early stages of the alternative development process that were subsequently eliminated from detailed study. These alternatives are described below:

Road to Rodman Bay -The original proposed action for the Northwest Baranof Project included construction of approximately 80 miles of road, which would have been interconnected between Nakwasina Passage and Rodman Bay. In addition to providing transportation for timber, the road would have provided portions of a road system extending from Sitka to Rodman Bay. Consideration of this interconnected route was dropped after initial analysis due to a number of factors including the shift to smaller independent timber sales, the high cost of the many road connections, and the lack of public support for an interconnected route. In addition, no harvest is planned in the Fish Bay Creek watershed in any alternative considered in detail, further reducing the need for an interconnected road system.

Harvest in Fish Bay and along Deadman Reach - As discussed earlier in this chapter, the Alaska Region released a Draft Environmental Assessment that proposed interim guidelines for maintaining viable wildlife populations. One component of this proposal was to establish a network of Habitat Conservation Areas (HCAs) across the Tongass. Two of the mapped areas lie within the Project Area (see Figure 2-4). We have deferred consideration of timber harvest in the Fish Bay drainage and along Deadman Reach as a part of this project to allow more time for consideration of the HCA option. Therefore, no alternative was considered in detail that included harvest in these two areas.

VCUs 310, 312, and 313 - These VCUs at the south end of the Project Area (nearest to Sitka) were dropped from consideration after initial field reviews. These field reviews determined that the suitable timber within the three VCUs was not economically accessible, nor found in sufficient quantity to justify harvest at this time.

Proposed Action

Early in the planning process for the Northwest Baranof Project, we developed a proposed action. The proposed action was the initial proposal for timber harvest activities in the Project Area. It served as a starting point for public scoping, for development of alternatives, and for environmental analysis. This proposed action was described in the Notice of Intent (NOI) published on July 12, 1993 and displayed in public scoping documents released at that time.

After these events, a number of changes affected timber sale planning on the Sitka Ranger District. The most notable was the shutdown of the pulp mill in Sitka by APC, and the subsequent termination of the APC Long-term Timber Sale Contract. Furthermore, additional field reconnaissance, the analysis of viable populations of wildlife, and expansion of the independent timber sale program, had an impact on timber sale planning for the Project Area. As a result, the proposed action was modified, a revised NOI was published on August 31, 1994, and a new round of public scoping was initiated.

We displayed the modified proposed action in our scoping documents and at our scoping meetings in the fall of 1994. Following scoping, the proposed action served as a starting point for alternative development. It was the basis for the first alternative developed (Alternative 1).

Final field reconnaissance identified some units and roads within the modified proposed action as being unacceptable due to resource concerns. These units and roads were dropped from Alternative 1. As a result, Alternative 1 as displayed in the Draft EIS was slightly different from the modified proposed action. See Alternative 1 for a complete description of the modified proposed action.

Alternatives Considered in Detail

We considered five alternatives (four action alternatives and a no-action proposal) in detail. Each alternative was developed to respond differently to the issues, and to provide a range of choices for the Forest Supervisor and the public. We have included maps (distributed with this EIS) which illustrate the proposed roads and harvest units for each of the five alternatives.

For each action alternative, there is a discussion of the theme or intent of the alternative. Following the description of the alternatives, there is a discussion of post-harvest silvicultural treatments, enhancement opportunities, and mitigation measures. Table 2-1 summarizes the volume and acres of timber harvest, logging systems, harvest methods, and roads proposed for development and use. Also see the alternative maps for greater detail.

Alternative 1

This alternative represents the “proposed action” as presented during public scoping and described earlier in this Chapter. It has been modified since public scoping to reflect harvest units dropped from further consideration because of resource concerns. This alternative distributes timber harvest throughout the Project Area. It proposes timber sales in seven individual geographic areas within the Project Area: two locations in Rodman Bay, Schulze Cove, St. John Baptist Bay, Noxon Creek, Nakwasina Sound, and Lisa Creek. There will be an LTF for each of the seven individual geographic areas, with the exception of Nakwasina Sound. At this location, logs will be placed directly in the water by helicopter. Alternative 1 proposes timber harvest on 1,739 acres with an output of approximately 36.4 mmbf of sawlog volume. In this alternative, 50 percent of the acres cut (16.5 mmbf) will be harvested using a helicopter logging system. In addition, 51 percent of the acres will be harvested using a harvest method other than clearcutting.

Alternative 1 maintains wildlife habitat and subsistence resources along the north shores of Nakwasina Passage and St. John Baptist Bay, and throughout the Fish Bay drainage. The current scenic quality on Baranof Island along the Alaska Marine Highway route would be maintained from Fish Bay to Sitka. Opportunity for increased motorized vehicle, bicycle, and foot access would be provided on the road system south of St. John Baptist Bay.

2 Alternatives Including the Proposed Action

Alternative 2

This alternative concentrates timber harvest in three areas that have had previous logging activity: Rodman Bay, St. John Baptist Bay, and Lisa Creek. It also minimizes further fragmentation of old growth as a result of additional timber harvest, especially in and adjacent to the Fish Bay and Nakwasina River watersheds. This alternative maintains the existing conditions in approximately 70 percent of the Project Area by deferring timber harvest in areas which have seen only limited harvest in the past. Alternative 2 proposes timber harvest on 2,501 acres with an output of approximately 51.9 mmbf of sawlog volume. In this alternative, 67 percent of the acres cut (33.2 mmbf) will be harvested using a helicopter logging system. In addition, 60 percent of the acres will be harvested using a harvest method other than clearcutting.

Alternative 2 maintains wildlife habitat and traditional subsistence use areas at the head of Nakwasina Sound, along the north shores of Nakwasina Passage and St. John Baptist Bay and throughout the Fish Bay drainage. The current scenic quality on Baranof Island along the Alaska Marine Highway route would be maintained from Deadman Reach to St. John Baptist Bay. Logging economics would be improved by using reconstructed roads in this alternative. LTFs will be located in Appleton Cove, Rodman Bay, St. John Baptist Bay, and Lisa Creek.

Alternative 3

This alternative concentrates timber harvest in the north end of the Project Area with logging at Schulze Cove and Rodman Bay. It also defers timber harvest in those portions of the Project Area closest to Sitka. This alternative emphasizes the maintenance of existing conditions south of Fish Bay and eliminates further fragmentation of old growth in that area. Alternative 3 proposes timber harvest on 1,889 acres with an output of approximately 38.8 mmbf of sawlog volume. In this alternative, 69 percent of the acres cut (25 mmbf) will be harvested using a helicopter logging system. In addition, 59 percent of the acres will be harvested using a harvest method other than clearcutting.

Wildlife habitat and traditional subsistence use areas south of Fish Bay are not affected by this alternative. The current scenic quality on Baranof Island along the Alaska Marine Highway route would be maintained from Fish Bay to Sitka. There will be two LTFs in Rodman Bay and one in Schulze Cove.

Alternative 4

This alternative distributes timber harvest throughout the Project Area. It proposes the highest level of timber harvest of all the alternatives while meeting standards and guidelines for other resources, and addressing current environmental, political, and social issues identified during scoping. It proposes timber sales in seven individual geographic areas within the Project Area (similar to Alternative 1) and creates a mosaic of diverse forest age structures. Alternative 4 proposes timber harvest on 3,262 acres with an output of approximately 66.9 mmbf of sawlog volume. In this alternative, 63 percent of the acres cut (40.6 mmbf) will be harvested using a helicopter logging system. In addition, 59 percent of the acres will be harvested using a harvest method other than clearcutting.

Post-harvest ORV use near Sitka would be enhanced due to road construction and maintenance. This alternative provides the opportunity for better sale scheduling and economic return both locally and nationally. Alternative 4 most nearly meets the

direction of the current TLMP for resource production in the Project Area. There will be LTFs in Rodman Bay (two locations), Schulze Cove, St. John Baptist Bay, Noxon Creek, Nakwasina Passage, and Lisa Creek.

Alternative 5 - No Action

This alternative provides the baseline for measuring effects of all action alternatives. Inclusion of a no-action alternative is required by the NEPA, and may be selected by the Forest Supervisor. No road construction or logging would occur under this alternative.

2 Alternatives Including the Proposed Action

Table 2-1
Summary of the Action Alternatives

	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Sawlog Volume (mmbf)	36.4	51.9	38.8	66.9
Sawlog & Utility Volume (mmbf)	45.0	64.2	48.0	82.7
Proposed Harvest Acres	1,739	2,501	1,889	3,262
Number of Units	96	107	71	153
Proposed Harvest by Logging System				
	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Skyline Acres	873 50%	820 33%	583 31%	1,151 35%
Helicopter Acres	866 50%	1,681 67%	1,306 69%	2,111 65%
Skyline Volume (mmbf)	19.9	18.7	13.8	26.3
Helicopter Volume (mmbf)	16.5	33.2	25.0	40.6
Proposed Harvest Acres by Harvest Method				
	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Clearcut w/Reserves	843 49%	991 40%	769 41%	1,354 41%
Seed Tree Cut	346 20%	632 25%	599 32%	803 25%
Overstory Removal	320 18%	570 23%	210 11%	642 20%
Group Selection	230 13%	308 12%	311 16%	463 14%
Proposed Harvest Volume (Sawlog) by Harvest Method (in mmbf)				
	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Clearcut w/Reserves	20.6	23.6	18.6	32.6
Seed Tree Cut	7.9	15.2	14.0	18.9
Overstory Removal	6.6	11.4	4.4	12.8
Group Selection	1.3	1.7	1.8	2.6
Proposed Roads and Log Transfer Facilities (LTFs), and Helicopter Insertion Log Transfer Sites (HILTS)				
	Alt. 1	Alt. 2	Alt. 3	Alt. 4
New Road Miles	19.3	18.5	9.7	23.8
Reconstruction Miles	11.9	13.1	9.0	16.5
Temporary Road Miles	10.0	8.2	6.8	14.5
No. of LTFs	6	4	3	7
No. of HILTS	1	2	1	3

Comparison of Alternatives by Issue

Fish Habitat and Water Quality

In response to this issue, all alternatives were designed to protect fish habitat and water quality. Chapter 4 concludes that there will be no measurable effects on fish habitat and related water quality for any alternative. All alternatives meet the requirements of the Clean Water Act. The implementation of the TTRA's requirement to provide a minimum 100-foot buffer on Class I streams and Class II streams flowing directly into Class I streams, will protect streams from proposed timber harvest and road construction.

Streams encountered during road construction are crossed using culverts or bridges. We install bridges where large volumes of water are anticipated. Bridges may be left in place depending on the Road Management Objectives (RMOs) (see Appendix D). Culverts are used to cross small drainages and to provide relief drainage under the road as necessary. Culverts placed in Class I or II streams are designed and installed to allow fish passage.

Both the TTRA and the TLMP require that we use Best Management Practices (BMPs) to minimize the adverse impacts of road construction and timber harvest on soil and water resources. The BMPs are methods, measures, or practices which maintain water quality. BMPs include structural controls, operation and maintenance procedures, and scheduling of activities. They are applied as a system of practices, and are selected on a site-specific basis. BMPs are a part of all stream course protection plans for Class I and II streams. Fish passage requirements for Class I and II stream crossings are also specified in BMPs.

Culverts and bridges will be installed using BMPs; however, each bridge or culvert constitutes a potential risk to fish habitat should the structure fail due to unforeseen natural occurrences. Although such risks are minimal, a comparison of the numbers of Class I and Class II stream crossings helps the decision maker assess the relative risks of each alternative. Table 2-2 lists the number of Class I and II stream crossings within each alternative.

Table 2-2
Proposed Construction of Roads Across Class I and II Streams by Alternative

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5 No Action
Class I Stream Crossings	39	42	36	53	0
Class II Stream Crossings	13	15	1	16	0

Source: Lorenz 1995.

2 Alternatives Including the Proposed Action

Wildlife Habitat and Populations

In response to this issue we have designed all alternatives to minimize the affect on wildlife as much as possible. In general, wildlife habitats will remain well connected by beach and estuary fringe, stream corridors, and the myriad of muskegs, steep slopes, and areas not scheduled for harvest. Areas of undisturbed old growth are maintained to protect natural ecosystem processes and landscape scale wildlife diversity. Those areas of old growth that are not altered by the activities proposed in the action alternatives will retain their habitat characteristics.

The greatest direct effect to wildlife habitats in all action alternatives will be the loss and fragmentation of old-growth habitat and related changes in forest habitat. Retention of old-growth forest throughout the Project Area in areas such as beach and estuary fringe and in areas left unaffected by proposed activities, is intended to buffer the effect of timber harvesting activities on old-growth dependent wildlife.

Table 2-3 displays potential reduction in wildlife habitat capabilities for deer, bear, river otter, brown creeper, bald eagle, marten, and mountain goat within the entire Project Area. This table displays the estimated habitat capability in 1995, and the estimated reduction in this capability if the actions proposed are implemented. Habitat capability does not indicate populations, but is a relative means to estimate and compare effects.

All action alternatives would decrease habitat capabilities by 2 percent or less for deer, 8 percent or less for brown bear, 5 percent or less for marten, and 2 percent or less for mountain goat. Alternative 5 (No Action) would maintain the current capabilities for wildlife.

Table 2-3
Potential Reduction in Wildlife Habitat Capability (in Percent) in the Project Area by Alternative

Species	1995 Habitat Capability	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5 No Action
Sitka Black-tailed Deer	4,219	<-1	-2	-1	-2	0
Brown Bear	198	-7	-1	-8	-8	0
River Otter	67	0	0	0	0	0
Marten	258	-4	-3	-3	-5	0
Mountain Goat	64	-2	-2	0	-2	0
Brown Creeper	304	-3	-7	-6	-8	0
Bald Eagle	188	0	0	0	0	0

Source: Hartmann 1995.

Old Growth

In response to this issue we have designed all alternatives to focus activities in areas of prior logging, to avoid large tracts of old growth, and to maintain corridors as much as possible. All action alternatives will reduce the acres remaining in old-growth by less than six percent. Furthermore, large portions of the Project Area are left undisturbed by all alternatives, resulting in the maintenance of the old-growth forests in the watersheds north of St. John Baptist Bay, surrounding Fish Bay, and along Deadman Reach. Finally, many smaller patches of old growth are also left untouched, including the beach and estuary fringes, the stream and riparian area buffers, and areas where the natural fragmentation of the forest has left small patches throughout the Project Area.

For inventory purposes we define old-growth forest in the Geographic Information System (GIS) data base as, "forest habitat over 150 years old with an average diameter at breast height greater than nine inches, and with timber volumes greater than 8,000 board feet per acre." Based on this definition, a total of 51,651 acres of old-growth forest occur in the Project Area at this time. Table 2-4 displays remaining old growth for each alternative.

Table 2-4
Acres of Old Growth Remaining in the Project Area by Alternative

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5 No Action
Acres Remaining	49,979	49,309	49,892	48,573	51,651
Percent of Current	97%	95%	97%	94%	100%

Source: Hartmann 1995.

Marine Environment

In response to this issue, we have attempted to minimize the effects of LTFs on the marine environment in all alternatives. We have attempted to use previous sites as much as possible. Application of the siting guidelines developed by the Alaska Timber Task Force will minimize the potential effects of LTFs on shellfish populations. The short period of use and relatively small volume of timber that will be handled at the LTFs will minimize bark accumulation. Construction of the proposed LTFs will affect little of the total marine habitat. Short-term and long-term effects on the marine ecosystem will be minimal as a result of LTF use.

Physical access to subsistence fish and shellfish areas will not be significantly changed by any of the action alternatives, however logging camp and LTF operations may conflict with subsistence users. In addition, the presence of logging camp residents may discourage other users in specific areas. An increase in competition for fish and shellfish would not be substantial because of the availability of resources in the immediate vicinity and in surrounding areas.

If an action alternative requires an LTF in St. John Baptist Bay, a barge facility will be used. This will minimize impacts to the bay's juvenile sablefish population. Table 2-5 indicates the locations of LTFs for each alternative and the estimated volume of timber

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each LTF would process. Locations of proposed LTFs and Helicopter Insertion Log Transfer Sites (HILTS) are displayed on the alternative maps.

Table 2-5

Volume of Timber (mmbf) Handled at Each Log Transfer Facility (LTF) or Helicopter Insertion Log Transfer Site (HILTS) by Alternative

LTF/HILTS	Estimated Sawlog Volume (mmbf)			
	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Appleton Cove		5.7		
NE Rodman	4.3		5.6	7.3
Rodman	8.0	24.8	21.9	24.8
Goose Cove (HILTS)		2.9	2.9	2.9
Schulze Cove	8.2		8.4	8.4
St. John Baptist	7.6	13.1		
St. John Baptist S.				4.4
Nakwasina Passage				8.7
Noxon	2.9			2.9
Nakawsina (HILTS)	2.1			2.1
Lisa Creek		5.4		
Lisa Creek NW	3.3			5.4
Total	36.4	51.9	38.8	66.9

Source: Allio 1995

Subsistence

The Alaska National Interest Lands Conservation Act (ANILCA) requires that the Forest Service determine if proposed activities may significantly restrict use of subsistence resources. If such a finding is made, then ANILCA requires public hearings and determinations regarding actions to minimize impacts prior to proceeding with a project. Chapter 4 contains the ANILCA 810 subsistence analysis. The analysis, including evaluation of public comments and subsistence hearing testimony, concludes that the foreseeable effects from the action alternatives do not indicate a significant possibility of a significant restriction for any subsistence resource other than Sitka black-tailed deer.

The analysis does conclude that there is a significant possibility of a significant restriction on subsistence use of Sitka black-tailed deer in the Project Area for the community of Sitka. Implementation of the action alternatives by themselves do not present a significant possibility of a significant restriction to subsistence use of deer. The effects of the action alternatives on the subsistence use of deer are minimal. However, there is a significant possibility of a significant restriction when the alternatives together with past, present, and reasonably foreseeable future actions are considered in a cumulative manner. This restriction exists regardless of which alternative is implemented, including the No Action Alternative. This restriction would be a result of (1) decreases in habitat capability that could decrease the abundance or distribution of deer, (2) high deer mortality during severe winters that occur periodically, (3) average yearly deer harvest levels exceeding what appears to be sustainable harvest levels, and (4) anticipated human population growth with its associated increase in subsistence hunter demand when compared to the habitat capability to produce deer.

Three major factors are used to assess subsistence impacts: distribution and abundance of subsistence resources, access, and competition with other subsistence users. These three factors are discussed in detail in Chapter 4.

Recreation

In response to this issue, we have attempted to locate timber harvest activities away from important recreation areas. Under all alternatives, the Project Area has potential to provide a wide range of recreation opportunities, activities, settings, and experiences. The change in recreation setting because of timber harvest and/or road construction activities may affect the recreational experience and, therefore, overall satisfaction of the forest visitor. Visitors seeking a natural recreational experience may not be satisfied in an area with active timber management activities. On the other hand, visitors who do not require a natural setting for their recreation activities may appreciate the opportunity to use new or existing roads for access to the interior of the Project Area. However, road access will be limited because the area will not be connected to a public road system or the Alaska Marine Highway.

Active timber layout and harvest operations may displace recreationists and outfitter/guides from areas of traditional use. Activities which have a low tolerance for the presence of other humans (such as bear hunting) will be particularly impacted. These effects are expected to decrease significantly after harvest activities cease and logging camps are closed. Table 2-6 displays percent change for recreation setting from a natural to a modified condition for each alternative.

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Table 2-6

Net Change From Natural to Modified Recreation Setting (in percent of total Project Area)

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5 No Action
% Change	+4.8%	+4.9%	+3.4%	+7.8%	0%

Source: Flynn 1995

Scenic Quality

In response to this issue, all harvest units, roads, and proposed sale areas were designed to minimize effects on scenic quality. This project contains the largest percentage of overstory removal and group selection harvest methods for any major timber sale on the Tongass National Forest. All activities were designed to avoid visually sensitive beach fringe and individual harvest units were designed to blend into the surrounding forest as much as possible. All alternatives, however, still result in additional visual impacts of varying degrees in the Project Area. These impacts would occur primarily from timber harvest, road construction, and the construction of LTFs. These activities create unnatural lines and textures in the landscape which contrast with the even-texture characteristic of Southeast Alaska old-growth rainforest. These visual impacts, in many cases, will be evident to the average forest visitor. We can measure visual impacts by the resulting acres within each Visual Quality Level, which would occur for each alternative (see Table 2-7). Visual Quality Levels are defined in the Glossary.

Table 2-7

Visual Quality Levels (in acres)

Visual Quality Levels	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5 No Action*
Retention	3,216	3,208	3,208	3,216	3,216
Partial Retention	47,070	49,258	46,884	40,510	61,046
Modification	75,774	75,441	75,968	81,950	64,030
Maximum Modification	29,670	27,853	29,670	30,084	27,468

Source: Ouderkirk 1995. * Existing VQO.

Economic and Social Quality

All action alternatives will meet the TTRA requirement to provide a supply of timber from the Tongass National Forest which meets the market demand on an annual basis and for each planning cycle. Alternative 4 would supply the largest amount of timber; Alternative 1 the least. Alternative 5, the No Action Alternative, will not meet this requirement.

Projected employment related to this Project varies with the amount of timber harvested. Table 2-8 displays the average annual employment (number of jobs) and income (wages) associated with each alternative. The jobs and wages listed include those both directly and indirectly dependent on the timber industry. The volume of timber harvested for each alternative results in a level of jobs and wages associated with that volume. Jobs and wages are based on the Forest Service economic model, IMPLAN.

Table 2-8
Projected Average Annual Timber-Related Employment and Income

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5 No Action
Number of Jobs	88	129	96	166	0
Wages (in millions)	\$3.7	\$5.5	\$4.1	\$7.1	0

Source: Morse 1995.

Less definable are the impacts on social dynamics related to each alternative. The No Action Alternative would be the most socially acceptable alternative to those people who need those areas which would be directly impacted by harvest in an unaltered condition. Conversely, the No Action Alternative will not contribute to timber-related employment which may result in the need for families to relocate to areas outside of Southeast Alaska to obtain financial security. The action alternatives provide a range of effects to the social environment which vary from the extremes provided by the No Action Alternative.

Heritage Resources

The National Historic Preservation Act (NHPA) directs Federal agencies to take into account the effect of proposed actions on historic properties. Historic properties are those properties included in or eligible for inclusion in the National Register of Historic Places. Federal regulations require a "Section 106 review" for proposed actions. In response to this issue, we have completed the NHPA Section 106 review for all timber harvest related activities proposed and displayed in the four action alternatives. This includes units, roads, and LTFs. As a result of this review, we have avoided all known heritage resource sites in the Project Area or otherwise specified stipulations to protect them.

We have not completed Section 106 review for logging camps, helicopter insertion log transfer sites (HILTS), shore-ties, and sort yards. Exact locations of these activities are not yet known, hence we are not yet able to determine their effects under the Section 106 process. Similarly, any activity associated with the planned sales which does not occur within 100 meters of potential roads, units, and LTFs displayed in this EIS will be subject to Section 106 review.

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Table 2-9
Summary Comparison of Effects of the Alternatives

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5 No Action
Old Growth	78	77	78	76	81
% Remaining					
Wetlands					
% of Wetland Acreage Affected	1.5	0.9	0.7	1.3	0
Wildlife Habitats					
% of Habitat Affected					
Beach Fringe	0.1	0.1	0.1	0.2	0
Estuary Fringe	0.6	0.5	0.2	0.6	0
Riparian	0.8	0.9	0.8	1.1	0
Old Growth	3.2	4.5	3.4	6.0	0
Second Growth	0.6	0.6	0.5	0.8	0
Alpine/Subalpine	0	0	0	0	0
Wildlife Habitat Capability					
% Reduction of Habitat Capability					
Sitka Black-tailed Deer	<-1	-2	-1	-2	0
Brown Bear	-7	-1	-8	-8	0
Marten	-4	-3	-3	-5	0
River Otter	0	0	0	0	0
Mountain Goat	-2	-2	0	-2	0
Brown Creeper	-3	-7	-6	-8	0
Bald Eagle	0	0	0	0	0
Recreation					
% Change in Setting from Natural to Modified	+4.8	+4.9	+3.4	+7.8	0
Visual Quality Level (VQL)*					
% Change in Acres					
Retention	0	-0.2	-0.2	0	0
Partial Retention	-22.9	-19.3	-23.2	-33.6	0
Modification	+18.3	+17.8	+18.6	+28.0	0
Maximum Modification	+8.0	+1.4	+8.0	+9.5	0
Economics					
Number of Jobs	88	129	96	166	0
Wages (\$ millions)	\$3.7	\$5.5	\$4.1	\$7.1	0

* An increase in one VQL is the result of a decrease in a more stringent VQL.

Actions Common to All Alternatives

All action alternatives would include building roads and LTFs, harvesting timber, and providing camp facilities for workers. For each of these activities, a range of options and methods is available. The various options and methods available for the action alternatives are described below. With these defined, the effects of these actions on natural resources can be evaluated.

Roads

Timber harvest in Southeast Alaska typically requires a road network to transport logs from harvest units to a LTF. This network is made up of specified arterial, collector, and local roads. All roads are built to appropriate standards to handle planned traffic and to minimize impacts to the environment. They are normally intended to provide long-term access for recurrent resource management activities. Arterial and collector roads are the backbone of the transportation system, accessing large land areas. Local roads are generally dead-end roads branching off of arterials or collectors to service small groups of units or a single unit. In addition to these, temporary roads are constructed when needed for one-time, short-term harvest access. After log haul is completed, temporary roads are taken out of service by installing waterbars in the roadbed and removing drainage structures. The miles of road construction planned by alternative are displayed in Table 2-1.

After construction, the road system is managed to provide access for accomplishing land use objectives and activities. Environmental protection, user safety, recreation, and maintenance of roads for future use are all taken into consideration when formulating a road management plan. Roads may be physically or administratively closed, obliterated, or maintained open. Commonly used methods of road closure include bridge removal, signing, barricading and gating. Roads that are permanently closed have all drainage structures removed to provide free passage of storm runoff. Rock can be removed from temporary roads and stock-piled for use in future road construction. Tables in Appendix D indicate, by alternative, how the roads will be managed following timber harvest.

Log Transfer Facilities

Three commonly used types of LTFs are the low-angle ramp, the low-angle slide, and the bulkhead. Helicopter Insertion Log Transfer Sites (HILTS) are also proposed for this Project.

Low-Angle Ramp

The low-angle ramp is constructed with rock on a 10 to 12 percent grade. The running surface width of the ramp varies from 20 to 30 feet and may include armor rock for protection from wave action. The low end of the ramp terminates at -2 foot mean low low water (mllw). A log stacker or front-end loader carries the log bundle down to the ramp and places the bundle in the water. The ramp has a low profile and blends in with the surrounding terrain. Construction costs are relatively low (\$5,000-15,000) and the footprint is kept to a minimum (less than 0.25 acre). Velocity of entry for the log bundles into the water is near zero.

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Low-Angle Slide

The low-angle slide is constructed with rock on a 10 to 12 percent grade. The running surface width of the ramp is typically 30 feet. Steel pipe rails are placed on the ramp. The low end of the rails terminate at -2 foot mllw and the top end of the rails is +15 feet. A log stacker or front-end loader places the log bundles on the rails and pushes the bundles down the rails until they float off. The low angle slide has a low profile and blends in with the surrounding terrain. Construction costs vary depending on the site conditions (\$50,000-80,000). Between periods of nonuse the rails can be taken out and used on other sites. The footprint is kept to a minimum (less than 0.25 acre). Velocity of entry for the log bundles into the water is near zero.

Bulkheads

Bulkheads are used for placing log bundles directly into the water for rafting or onto a barge. Bulkheads have been constructed from a variety of materials of which the most common is the native log crib. Steel rail cars and sheet piling are two other types of material in use.

Small Barge

Bulkheads used to transfer logs to a small barge are sited in water depths of -2 foot mllw with a top elevation of +12 feet. The face of the bulkhead is 30 feet wide. Construction costs are low and range from \$10,000-20,000. The footprint is kept to a minimum (less than 0.25 acre). This bulkhead can also be used for equipment offloading, minimizing impacts to the intertidal waters. Small barges carry 400,000 bf.

A-Frame or Crane

Bulkheads used to transfer logs directly to the water for rafting are sited in water depths of -2 feet mllw with a top elevation of +22 to 24 feet. The face of the bulkhead is 60 to 80 feet wide. An A-frame or crane is used to lift the log bundles off the trucks and lower them into the water. Entry velocity is controlled by the design of the system and the operator. The area of intertidal fill depends on the slope of the shoreline (less than 0.50 acre). Large quantities of shot rock fill are needed. This type is suited for beaches with steep gradients. Construction costs range from \$40,000-80,000. The visual profile is higher than for the ramp type.

Large Barge

Bulkheads used to transfer logs to a large barge are sited in water depths of -12 feet mllw with a top elevation of +24 feet. The face of the bulkhead is 40 feet wide. Construction costs are high and range from \$150,000-300,000. The footprint is usually less than 0.40 acres. This type of bulkhead also requires a separate equipment offloading facility. Large barges carry 1,200,000 bf. This facility is designed for permanent installations and has a 40 to 50 year design life.

Helicopter Insertion Log Transfer Site (HILTS)

At a HILT Site, logs are lowered into the water by helicopter. The HILTS would be enclosed by a log boom tied to shore. Logs can be loaded directly from the log boom to a barge, or towed to an LTF where they can be removed, bundled, and returned to the

water for rafting. We propose HILTS in the Project Area in Nakwasina Sound, Goose Cove, and Rodman Bay.

Rafting Areas

An area is needed at or near LTF sites to build log rafts. The logs are usually separated into three different types of rafts prior to being towed to the point of primary manufacturing. The three types are sawlog, pulp log, and cedar rafts. The area needed to construct rafts is usually 400 feet by 700 feet. The logs are delivered to the LTF site on a truck, banded together, placed into the water, then moved to their respective rafts by a boom boat. The rafting area is located in water deep enough so that the rafts will not go aground. The Forest Service is required to obtain permits for the rafting area from the U.S. Army Corps of Engineers, the Environmental Protection Agency, and the State of Alaska.

Logging Systems

There are a variety of systems that a logger may use to handle and transport logs from the tree to the log transfer facilities (LTFs). These systems include four components (cutting, skidding or yarding, loading, and transportation). The systems derive their names from equipment used to yard the logs. For example, helicopter logging systems or cable logging systems.

Yarding is the process of conveying logs from the stump to the landing. This can be done with ground-based equipment, cable logging systems, or helicopters. The method used depends upon many factors including access, topography, slope and resource protection needs. We are proposing both cable (including running skyline, and live skyline) and helicopter logging systems in all action alternatives. During sale layout and administration, the yarding system may change to best meet the objectives of the prescribed treatment and to protect the resources.

The moist, soft soils and steep slopes in the Project Area are difficult for operation of ground-based equipment (e.g., track or rubber tired skidders). Except for shovel yarding with track-mounted log loaders, there has been little opportunity for use of this type of equipment. Shovel logging is the process of moving logs with the boom of a hydraulic log loader. It is generally limited to slopes less than 30 percent. Portions of proposed harvest units that are designated cable yarding may be suited for shovel yarding.

Cable logging systems include highlead and skyline systems. A live skyline is often referred to as a slackline when the skyline can be raised or lowered during the yarding operation. This slackline configuration, in addition to running skyline and highlead systems, can be used to yard logs both up and down hill. Skyline systems are capable of lifting one end, or completely suspending the log. The impact of log movement with these systems compared to highlead is much less. No highlead yarding is planned under any of the alternatives. Convergence or divergence of drag corridors is similar among the different skyline systems.

In helicopter yarding, logs are lifted off the ground and flown (usually downhill) to landings or salt water. Helicopters are typically used in situations where road access is precluded, or other yarding systems would cause unacceptable soil displacement or damage to surrounding vegetation. Yarding distances can be a mile or more, but the high cost of operations usually restrict their use to distances of 3,000 to 4,000 feet. Logs are

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landed either directly into the water, onto large landings for truck haul, or onto a barge for transport to a mill. This logging system causes the least amount of impact to the soil and minimizes road construction, but has the highest yarding cost.

All of the above logging systems are capable of clearcut harvest, provided unit design and resource protection requirements are not limiting factors. However, for partial removal of the standing timber with the objective of retaining regeneration, individual trees, or groups of trees, the preferred logging systems are uphill running skyline, uphill live skyline, or helicopter. These systems obtain the necessary lift and control of the logs during yarding to prevent damage to residual trees. Table 2-1 shows a comparison of proposed logging system acreages for the action alternatives. Alternative 5 is not included, since it does not propose harvest for this Project.

Each logging system has advantages, disadvantages, and constraints which limit its applicability. We selected logging systems for harvest units in the Northwest Baranof Project to capture the advantages of each system within the applicable constraints.

Camp Facilities

We are proposing ground-based logging camps at previously used sites in Rodman Bay and St. John Baptist Bay, and new sites at Noxon Creek and Schulze Cove. Harvest in the Project Area will be conducted out of these camps, floating camps, or existing logging camps in nearby areas. If a ground-based or floating camp is not located near an LTF, a watchman trailer and maintenance shop would be installed. We complete plans for logging camps with the timber purchaser after the timber sale is sold.

The size of logging camps for timber sale operations in the Project Area will be dependent on the size and combination of sale offerings. We expect the camps to house from 30 to 100 people. This would include family members along with the workers. The camp would be constructed in the first year of the particular sale offering and would be in place for three to five years, depending on the size of the offering. A typical logging camp provides living and office space within temporary modular structures and mobile homes, one or more rough-lumber equipment storage and maintenance shops, and electricity provided by a diesel-powered generator. Camps are connected to the timber harvest road system.

TTRA Stream Buffers

Measures which protect water quality and fish habitat include application of the Best Management Practices (BMPs) stated in the Soil and Water Conservation Handbook (USDA FSH 2509.22) and the Aquatic Habitat Management Handbook (USDA FSH 2609.24). These handbooks provide standard operating procedures for all stream classes. In addition, the TTRA mandates a minimum 100-foot buffer on all Class I streams and on Class II streams that flow directly into Class I streams. The width of this buffer strip may be greater than 100 feet for reasons such as topography, riparian soils, a windfirm boundary, timber stand boundaries, logging systems requirements, and varying stream channel locations. In addition, certain Class III streams flow directly into or have been identified as influencing Class I streams. These Class III streams have been buffered to the slope break of the channel or to a windfirm boundary to protect water quality. Application of the BMPs and adherence to the law will protect water quality and fish habitat as well as riparian habitat important to other species such as brown bear and furbearers.

Proposed Harvest Units or Combinations of Harvest Units Over 100 Acres

Regulations implementing the NFMA provide that 100 acres is the maximum size of created openings to be allowed for the hemlock-Sitka spruce forest type of coastal Alaska, unless excepted under factors defined in the Alaska Regional Guide (USDA Forest Service 1983). These factors include:

- Natural and biological hazards to the survival of residual trees and surrounding stands
- Topography
- Relationship of units to other natural or artificial openings and proximity of units
- Coordination and consistency with adjacent land use designations
- Effect on water quality and quantity
- Effect on wildlife and fish habitat
- Regeneration requirements for desirable tree species
- Transportation and logging system requirements
- Relative total costs of preparation, logging, and administration of harvest
- Visual Absorption Capability

Where it is determined by an interdisciplinary analysis that exceptions to the size limit are warranted, the actual size limitation of openings may be up to 100 percent greater (200 acres total) if required due to natural biological hazards to the survival of residual trees and surrounding stands, and 50 percent greater (150 acres total) for the remaining factors. The Forest Supervisor will identify the conditions under which the larger size is warranted.

Table 2-10
Proposed Harvest Units or Combinations of Units Over 100 Acres

Unit Numbers	Total Acres	Alternatives	Factors Warranting a Larger Size
3301, 3302, 3303, 3304	121	4	Transportation and logging system requirements; relative total costs of preparation, logging, and administration of harvest
3311, 3312, 3313, 3314	123	3, 4	Transportation and logging system requirements; relative total costs of preparation, logging, and administration of harvest
3012	138	2, 3, 4	Natural and biological hazards to the survival of residual trees and surrounding stands (entire stand is infested with mistletoe)
3304, 3313, 3315	101	1	Transportation and logging system requirements; relative total costs of preparation, logging, and administration of harvest

Source: Mork 1995

2 Alternatives Including the Proposed Action

Post-harvest Silvicultural Treatments

The post-harvest silvicultural treatments we expect to use include precommercial thinning and hand planting of harvested units. In addition, we will survey previously harvested areas and recommend precommercial thinning when appropriate. Proposed hand planting and precommercial thinning of harvest units is displayed for each alternative. For more detailed information on precommercial thinning and hand planting proposed, see Appendix A.

Reforestation is the process of establishing a new forest on harvested areas. The Forest Service is required by law (NFMA), regulations, and policies to plan timber harvests only on lands where there is assurance that such lands can be regenerated within five years after the harvests are completed. Reforestation can be accomplished by natural seeding from surrounding timber stands or by planting. Natural regeneration is the method of choice in Southeast Alaska and usually produces satisfactory results.

Hand planting may be necessary or desirable when a natural source of seed for a desired species is inadequate to maintain a timber stand's current species composition, or when it is desirable to reduce the time needed for natural regeneration. Table 2-11 presents by alternative the potential number of acres identified for hand planting. The number of acres to be hand planted to maintain species composition can be reasonably estimated before harvest. We will not know the specific location and acreage where planting will be necessary to supplement natural regeneration until post-harvest restocking surveys assess the adequacy of natural regeneration.

Natural regeneration often results in dense stands of trees. We use precommercial thinning to regulate the growth of these young trees. By thinning tree stands, we can control species composition, improve genetic composition, enhance wildlife habitat, and increase windfirmness. Precommercial thinning creates more space for the remaining trees to grow, and may increase financial return (Ruth and Harris 1979). The number of acres identified for precommercial thinning by alternative are displayed in Table 2-11. Actual acres thinned may vary from those predicted as a result of site-specific examinations.

Table 2-11
Acres Proposed for Hand Planting and Precommercial Thinning by Alternative

Alternatives	1	2	3	4
Hand Planting	344	412	277	573
Precommercial Thinning	932	1,538	1,061	1,844

Source: Dougan 1995

Enhancement Opportunities

The Knutson-Vandenberg Act (1930), as amended by the NFMA of 1976, allows the Forest Service to collect receipts from timber sales for Sale Area Improvement (SAI) projects. Top priority for these funds is to ensure stand regeneration. The Sitka District Ranger will prioritize subsequent projects, such as precommercial thinning, fisheries enhancement, and soil stabilization and list them on the SAI plan. If funding for resource enhancement projects is not available from K-V receipts, these projects could be added to the regular program budget. The Sitka Ranger District will develop the SAI plan after the ROD is signed. We identify specific projects in Appendix A.

Mitigation Measures

We began applying mitigation measures during the planning phases of this project. We have applied standards, guidelines, and direction contained in the current TLMP, the Alaska Regional Guide, and applicable Forest Service manuals and handbooks in the development of alternatives and the design of harvest units and roads.

We will identify specific mitigation measures to reduce or eliminate adverse effects in the Project Area at the time the Record of Decision (ROD) is signed. We used issues identified during scoping to define the resource areas where mitigation is needed. A brief summary of mitigation measures common to all alternatives is included in Appendix A. Specific mitigation measures as applied to each harvest unit and road are identified on the respective unit and road cards. These cards are an important tool for implementing the project as they list design considerations and provide a mechanism for tracking project implementation. Unit Cards are included in Appendix N. Road Cards are in Appendix O.

2 Alternatives Including the Proposed Action

Monitoring

Monitoring is designed to determine if the resource management objectives of the Northwest Baranof Project have been met. The results will be used to verify implementation and effectiveness of selected mitigation and protection measures in a timely manner. Three types of monitoring (implementation, effectiveness, and validation) were recognized in the development of the monitoring plan. The monitoring plan is described in Appendix A. Regardless of which alternative is selected, we will conduct monitoring activities over the course of the Project to determine if standards and guidelines for the Project Area have been met.

Implementation monitoring assesses whether the Project was implemented as designed and whether or not it complies with the TLMP. Effectiveness monitoring examines the effectiveness of the Project's design, including unit layouts, road location, and mitigation measures that preserve natural resources and their beneficial uses. Each activity is monitored separately, and the resulting data is analyzed and reported by the Forest Service staff responsible for the activity. The Forest Service conducts validation monitoring to determine if the assumptions or models used in planning are correct. Validation monitoring is usually carried out at the Regional level in conjunction with research and is identified in the Forest or Regional planning process. As such, no validation monitoring is identified in this EIS.

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Chapter 3

Affected Environment

In this chapter we document the existing condition of resources within the Northwest Baranof Project Area. We have included discussions of all resources that may be affected by the proposed actions. We will use this information as the baseline for measuring the effects of the alternatives we discuss in Chapter 4.

Overview

Value Comparison Units (VCUs)

Value Comparison Units (VCUs) are distinct geographic areas defined by the TLMP, each encompassing a drainage basin containing one or more large stream systems. The boundaries usually follow watershed divides. The Tongass National Forest contains 867 VCUs. We refer to VCUs to describe the locations of specific resources in the Project Area. Table 3-1 provides a summary of information about Project Area VCUs.

Table 3-1
Summary of Northwest Baranof VCUs

VCU	Local Name	National Forest Lands (acres)	Other Ownership (acres)	Total Acres	Previous Harvest (acres)	Shoreline (miles)	Existing Specified Road (miles)	LUD
287	Fish Bay	42,392	0	42,392	1,669	23.90	9.6	III
288	Range Creek	6,074	1,052	7,126	0	10.70	0.0	III
289	Nixon Shoal	8,560	0	8,560	279	12.20	0.0	III
290	Cozian Reef	5,262	0	5,262	149	5.00	0.0	III
291	Peschani Point	12,010	0	12,010	1,935	4.40	6.6	IV
292	Rodman Bay	24,071	235	24,308	3,885	14.90	14.4	IV
299	Annahootz Mountain	23,670	0	23,670	1,712	6.70	0.4	IV
300	Nakwasina Passage	12,757	0	12,757	1,091	9.60	8.4	III
301	Nakwasina Sound	5,633	70	5,703	787	4.20	3.9	III
302	Neva Strait	14,217	0	14,217	689	22.40	8.0	III
Total		154,646	1,357	156,003	12,196	114.00	51.3	

Source: GIS. Note: The acreage of other ownership listed in this table reflects recent conveyance of National Forest lands to the State of Alaska (see Land Status section later in this chapter). Previously, National Forest lands in the Project Area included 155,767 acres. Some of the analysis displayed in this EIS reflects the previous acreage.

Geography

Baranof Island is dominated by a very wet maritime climate and is exposed to outer coast storms and weather. It is the most rugged of all the islands in Southeast Alaska and is highly dissected by streams and rivers. The present topography of the Northwest Baranof Project Area is largely the result of geologic uplift and glaciation. Deformation, metamorphism, and intrusion of thick sequences of interbedded sediments and major volcanic intrusions formed the gross topography. Extensive glaciation modified the topography forming cirque basins, U-shaped valleys, till plains, hanging valleys, outwash plains, and fjords. Mainland ice moved down from continental ice fields via rivers to cover all but the highest elevations. Faults channelled ice flows into valleys, deepening and broadening the existing features. Minimum elevation of ice cover was generally between 2,600 and 3,600 feet on islands and 6,500 to 8,200 feet on the mainland. Maximum retreat of the ice sheet occurred 6,000 to 8,000 years ago when mean annual temperatures were about 1°F warmer and precipitation was much less. Melting of the ice sheet caused the sea level to rise, inundating many glacial valleys and depositing marine terraces well above present sea level. Many valleys are still inundated, forming waterways and bays. Uplift of the land after glacial retreat exposed numerous marine terraces. This uplift has ranged from 60 to 500 feet (Martin et al. 1995).

Post-glacial volcanic eruptions are limited to Kruzof Island. The best documented eruption of Mt. Edgecumbe and associated craters occurred 9,000 years ago. Thick deposits of ash and small ejected rock fragments (lapilli) were windblown as far east as Sitkoh Bay (southeastern Chichagof Island), but are most concentrated on Kruzof, southwestern Chichagof and northwestern Baranof islands (Martin et al. 1995).

Climate

The Project Area lies in the Southeast Alaska maritime climate region. Mean annual temperature is 40°F. Average annual precipitation ranges from 90" to 220" on Baranof Island. Most snowfall occurs between December and March. Snowfall is highly variable in amount and persistence from year to year, especially at low elevations along the coastline. During mild winters, coastal low elevation areas may remain snow free (Martin et al. 1995).

The growing season, measured as number of days with minimum temperature above 32°F and maximum temperature above 40°F, averages 186 days at the Sitka Airport. Average maximum temperatures during the summer growing season range from 55°F to 66°F. Daylight varies from 7 hours during the winter to about 18.5 hours during the summer. Summer daily temperature fluctuations are reduced due to long day lengths and cloud cover. Daily winter fluctuations are moderated by low sun angle and cloud cover (Martin et al. 1995).

Prominent low pressure systems cause frequent fall and winter storms which often result in blowdown of forest stands. Prevailing wind direction is strongly influenced by local topography (Martin et al. 1995).

Ecological Patterns and Processes

Ecosystem management involves a shift in focus from sustaining production of goods and services to sustaining the viability of physical/biological, social, and economic systems now and into the future. Ecosystem functions are sustained when they remain within the bounds of their natural and biological range. Across large areas, ecosystem processes such as disturbance, succession, evolution, extinction, recolonization, and fluxes of materials that characterize the variability found in natural ecosystems should be present and functioning. Management activities should emphasize resilient ecosystems capable of remaining within the natural range of variability if left alone. Natural disturbance patterns should be conserved or restored.

Southeast Alaska is a unique ecosystem consisting of hundreds of islands separated by narrow waterways. These islands range in size from less than one acre to over one million acres. Forests of this region have developed under relatively short, cool, and extremely wet growing seasons, with cloud cover more common than clear days. Soil moisture is excessive, rather than limiting, and fire is essentially absent. Consequently, most of these forests are old growth.

Ecological processes acting on and creating the environmental conditions shape plant and animal communities present in a National Forest. Significant ecological processes in the Project Area include tectonic (geologic time scale), glacial, erosion (e.g., landslides), fluvial, wind (e.g., blowdown), and other disturbance processes. These processes act on site factors such as:

Topography and Geology - Physical characteristics of the Project Area include steepness of slopes, soil origin, and elevations. In addition, the distribution and age of the natural vegetational communities is the result of glacial advances and recession.

Climate - The amount and pattern of rainfall, snowfall, and average temperatures play a major role in vegetation species and patterns.

Soils - Soil development is a function of climate, parent material, topography, vegetation, and time. Soil characteristics and drainage are major influences on plant distribution and productivity.

Natural Disturbances - The influence of insects, diseases, wind, and landslides have a profound effect on the structure and composition of vegetation in Southeast Alaska. They are widespread, low intensity, natural disturbance factors that shape forested vegetation in the Project Area.

Ecological processes are not independent, but rather combine to create the environmental conditions which are the basis for the plant species and vegetative patterns in Southeast Alaska. Forty-five percent of the forest land within the Project Area is old growth. The islands of Southeast Alaska provide important habitat for plants and animals, yet rarely are populations of all species found on all islands. Factors such as island size and distance to other islands and the mainland, influence the ability of a species to successfully colonize islands. Behavior and ecological relationship factors are also thought to influence animal species distribution. For example, Baranof Island supports

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brown bear but not black bear populations. Some Southeast Alaska islands have populations of gray wolves, while Baranof Island does not. The presence or absence of gray wolves has an important influence on the distribution and abundance of other species such as Sitka black-tailed deer (USDA Forest Service 1991).

Physical and Biological Environment

Geology and Soils

Geology

The geology in the Project Area has been investigated on numerous occasions. The U. S. Geological Survey studied the area in the 1960s under the direction of Robert A. Loney and David A. Brew. They completed their report in 1975. Loney and Brew identified the rocks within the Project Area as primarily Triassic and Jurassic amphibolite, phyllite, greenstone, greenshist and graywacke (Loney et al. 1975).

Brew (1992) indicated that no limestone bedrock was identified in the Project Area during his field work for the U. S. Geological Survey. The only such occurrence of limestone found by his crews is at the head of Katlian Bay. However, during field reconnaissance for the Project the Forest Service found a small deposit of limestone on the ridge between the head of Fish Bay and Nakwasina Passage. The deposit appears to be a small sequence of interbedded limestone, graywacke, phyllites and mudstones, extending 500 to 1,000 feet along a north-northwest strike and estimated to be 200 to 250 feet in width. The bedrock has been tipped vertically and is covered by moderate to deep volcanic ash deposits. Minor karst features were observed, as were a few sinkholes, of which the largest was approximately 20 feet across and 15 to 20 feet deep.

No major geologic structures (faults) have been identified during past U. S. Geological Survey reconnaissance.

Mining/Mineral Potential

The Project Area does not have an active mining history. The only portion of the area to experience mineral activity is Rodman Bay. Mineral occurrence here was limited to small, low-grade, sulfide bearing quartz and calcite stringers interlaced in slate (Wright 1904, 1906). The deposit was located in 1898 and explored through 1903. A vast amount of money was invested in the mine. Underground workings, a 120-stamp mill and a narrow-gauge railroad were developed. By late 1903 the mine had played out; it closed in early 1904. There is no recorded production from the mine. The locations were patented in 1902 and 1903, and are private lands.

The U. S. Bureau of Mines and the U. S. Geological Survey (Brew et al. 1991) have evaluated the mineral potential for most of Southeastern Alaska. They have identified areas to the west and south of the Project Area as having a high mineral potential for precious and base metals and some strategic minerals, however the mineral potential within the Project Area is considered low.

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Caves

The Federal Cave Resources Protection Act of 1988 requires that "significant" caves located on Federal lands be preserved and protected for the perpetual use, enjoyment and benefit of all people. It defines a cave as: "any naturally occurring void, cavity, recess, or system of interconnected passages which occurs beneath the surface of the earth or within a cliff or ledge and which is large enough to permit an individual to enter, whether or not the entrance is naturally formed or man-made. Such term shall include any natural pit, sinkhole, or other feature which is an extension of the entrance." Caves and cave resources generally occur in areas of karst topography, or areas underlain by soluble rock, principally limestone.

Limestone (carbonate) bedrock has been located within the Project Area in a small deposit on the ridge between the head of Fish Bay and Nakwasina Passage. We surveyed this area for caves and observed karst topography as well as a few sinkholes. No caves were located. However, we identified one sinking spring in this area. Hydrology in karst topography is unique and groundwater channeling unpredictable. Further investigation such as dye testing is needed to determine what adjacent areas are connected to this spring.

Soils

Soils on northwest Baranof Island are found on a variety of terrains shaped by glaciation and characterized by U-shaped valleys with mountains extending 2,000 to 3,000 feet above sea level. Glacial till of variable thickness occurs in the valley bottoms and up to 1,500 feet on the sideslopes. Many of the valleys have numerous rocky knobs scoured by glaciation.

Soil Development

High levels of rainfall, cool maritime temperatures, and moderately low yearly soil temperatures influence soil development in Southeast Alaska. Under these conditions, vegetative debris decomposes slowly, resulting in a thick layer of organic material. In general, the characteristics of the parent material, topography, vegetation, and climate influence the features of soils that affect and are affected by timber harvest activities. Soils in the Project Area influence:

- the overall vegetation composition,
- water quality,
- riparian area and wetland functions and values, and
- productivity of timber, fish, and wildlife.

Soil Productivity

Soil productivity is a function of such factors as parent material, nutrient availability, drainage, depth, microorganisms, and soil type. Soil productivity, or the inherent capacity of a soil to support the growth of specific plants or plant communities (FSM 2554.03), affects productivity of most other forest resources such as tree growth and wildlife and fish habitat. In the Project Area, productivity of mineral soils ranges from very high to low. Timber site productivity on poorly and very poorly drained organic

soils, regardless of elevation or northern extent, is generally much lower than the productivity of mineral soils.

Maintaining the organically enriched topsoil is critical for long-term site productivity. Soil productivity and its related nutrient content can be influenced in a number of ways by timber management activities. Removal of the surface layer may be caused by landslides, surface erosion, severe yarding disturbance, or from displacement by roads, skid trails, landings, or rock pits. Soils can also be damaged by puddling, which impairs soil porosity and drainage, and therefore reduces productivity. Changes in soil productivity that last beyond the planning period are considered to be significant impairments. Fifteen percent reduction in inherent soil productivity potential is the threshold for setting values for change in measurable or observable soil properties associated with long-term productivity (FSM 2554.03).

Soil Erosion

Two major types of erosion occur within the Project Area: surface erosion and landslides.

Surface Erosion

Most undisturbed soils in the Project Area are resistant to surface erosion because they are generally protected by layers of organic matter and the roots of vegetation. When mineral soils are exposed erosion can occur. The rate of erosion depends primarily on the amount of vegetation ground cover, erodibility of the soil and the steepness of slope. Surface erosion and landslides are most likely to occur along stream banks, snowslide or avalanche slopes, and within V-notches. Timber harvest activities and road construction may increase the erosion rate by exposing mineral soil.

Landslides

Landslides are the dominant process of natural erosion in Southeast Alaska. Many landslides occur during or immediately after periods of heavy rainfall when soils are saturated. Landslides usually occur on steep slopes that have soils with distinct subsurface "slip" layers (slip-planes), such as compact glacial till or bedrock that slopes parallel to the ground surface. These areas have a high likelihood of landslides. Landslides may occur naturally, or may be caused by blasting rock, road construction, or logging practices.

Vegetation, particularly tree roots, seems to have a stabilizing effect on slopes, but tree roots tend to significantly decrease in strength five to seven years after a tree is cut (Swanston 1989). This decrease in soil-holding capacity results in an increased likelihood of soil movement on steep slopes following clearcutting. Effects of partial cutting on slope stability in Southeast Alaska are relatively unknown. Under natural conditions, windthrow is an important triggering device of landslides in Southeast Alaska.

The Forest Service rated soil landtype mapping units using the Chatham Area Integrated Resource Inventory Mass Wasting Interpretation (Forest Service 1990). We used landslide mass-movement hazard (MMHaz) ratings to group soil map units that have similar properties with respect to the stability of natural slopes. There are four classes of mass-movement hazard: 1 (low), 2 (moderate), 3 (high), and 4 (extreme). We assign these classes to soil map units according to their relative potential for landslides, as indicated by their physical properties.

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Naturally unstable soils are common throughout the Project Area. Parent material is used as an indicator of relative soil stability. Soil formed from volcanic ash is one of the factors that contributes to a high potential for mass failure. Volcanic ash has a higher inherent potential to fail than any other parent material type found in the Project Area. Table 3-2 shows total acreage of each mass-movement hazard rating in the Project Area by VCU. MMHaz ratings are based on general characteristics of typical soil map units.

Table 3-2
Total Acres of Each Mass-Movement Class by VCU

VCU	Low	Moderate	High	Extreme	Total Acres*
287	10,086	17,812	10,083	4,175	42,156
288	1,923	3,357	1,362	444	7,086
289	1,848	3,267	2,199	1,243	8,557
290	1,219	2,352	1,034	654	5,259
291	5,345	3,601	2,286	769	12,001
292	8,326	4,372	7,735	3,868	24,301
299	3,829	1,721	13,585	4,261	23,396
300	2,654	4,075	4,770	1,184	12,683
301	1,264	874	2,833	724	5,695
302	2,319	7,394	3,124	1,145	13,982
Total	38,813	48,825	49,011	18,467	155,116

* Does not include lakes. Source: Huecker 1993.

Vegetation

The natural vegetation of northern Southeast Alaska is predominately old-growth coniferous forest interspersed with alpine tundra, peatlands (muskeg), shrublands, estuarine, and beach fringe plant communities. Permanent ice, rock, and persistent snowpack in some areas contribute to the mosaic. Differences in vegetation typically relate to varying soil drainage conditions. The distribution of vegetation is also affected by temperature, elevation, and disturbance (Martin et al. 1995).

Five evergreen tree species occur within the Project Area: western hemlock, Sitka spruce, mountain hemlock, yellow cedar, and shore pine. Tree species composition varies by location, topography, drainage, soil type, and stand history. Black cottonwood, red alder, and other hardwoods also occur. Red alder is used locally for firewood, carving, and smoking fish. Alders are capable of fixing atmospheric nitrogen and so are valuable in improving soil fertility. Trees on noncommercial forest land are predominantly hemlocks, cedars, and shore pine (Harris and Farr 1974).

Blueberry, rusty menziesia, devil's club, and salmonberry are the most widely distributed shrubs. Five-leaf bramble, bunchberry, fern-leaf goldthread and heart-leaved twayblade are the most widely distributed forbs. Deer fern and oak fern are the most common ferns. Non-vascular plants such as mosses, lichens, and liverworts are also abundant in the Project Area (Martin et al. 1995).

Open forest stands grow mainly on organic soils. Stands of this type which contain less than 8,000 board feet of timber per acre are presently classed as noncommercial or "scrub" stands. Trees in these stands grow slowly and are often stunted. Yellow cedar, mountain hemlock, shore pine, and Sitka spruce are important species in this forest community. The open canopy allows sufficient light to reach the forest floor to support dense understory vegetation of blueberry, huckleberry, rusty menziesia, other tall shrubs, and numerous small vascular plants. These stands are important wildlife habitat (Harris and Farr 1974).

Above timberline, the alpine zone is dominated by heaths, grasses, and other low plants. Plants such as deer cabbage cover wide areas and form excellent summer range for deer. Occasional trees occur, often with stunted or shrub like form, due to adverse growing conditions. Timberline generally varies in elevation from 3,000 feet in the south to 2,500 feet in the north, but may be depressed because of differences in climate, topography, and other factors which influence snow accumulation, storage, and avalanching. The alpine area provides many fine recreation and scenic opportunities (Harris and Farr 1974).

Old-growth Forests

Most of the commercial forest land in the Project Area is considered old growth. Old-growth stands are those in which the majority of the trees are more than 150 years old. Old-growth stands exhibit wide variance in structure and species composition. The commercial quality of these stands varies by site. Some sites are believed to be declining (Oliver 1990). Others seem to remain stable while still others may be increasing in net growth (Hutchison 1967). For planning purposes, it is assumed they are in a stable state.

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Uneven-aged, old-growth stands contain trees of a wide range of sizes, from seedlings and saplings to large, mature overstory trees, as well as a high proportion of dying trees and snags. Trees decay and die with age, and stands advanced in age become more defective. As trees die, openings are created in the overstory in which new growth may become established; in stands with these characteristics, death and regrowth is a continual process.

Table 3-3 displays existing old-growth acres by VCU and the amount of old growth required to meet the wildlife habitat retention requirements in the TLMP. The retention provision in the TLMP is intended in part for managing wildlife and fish habitats on the Tongass National Forest. Certain species find optimal habitat in old-growth forest for all or a portion of their life requirements. For these species, it is important that forest management maintain old-growth forest.

Old-growth forest conditions to meet the needs of old-growth dependent wildlife species have been considered within the Project Area. Habitat for these species will be retained in beach fringes, estuary fringes, Class I and II stream riparian buffers, and in watersheds throughout the Project Area, where timber harvest is not scheduled at this time.

Table 3-3
Old Growth Acres by VCU

VCU	Existing Old Growth	TLMP Retention Acres*
287	13,584	1,121
288	2,245	84
289	3,009	296
290	1,587	235
291	5,710	293
292	8,607	446
299	2,889	194
300	5,167	2,156
301	2,405	234
302	6,448	2,119
Total	51,651	7,178

Source: Hartmann 1995. * Acres designated in the TLMP to be retained.

Even-Aged Stands

Within the Project Area, the even-aged and second-growth stands are results of windthrow, landslide, and past timber harvest. Even-aged stands contain trees of relatively uniform age. These stands are vigorously growing and have few dead and dying trees. Over time, even-aged stands may convert naturally to uneven-aged stands as trees mature and die, and new growth becomes established in the openings. Timber

management prescriptions may also be designed to maintain uneven-aged stand conditions.

Natural Disturbances

Natural disturbances provide the mechanism for changes in forest structure and composition. Disturbances have an effect on forest development by removing the vegetation, thus creating new growing spaces for other species to occupy. Forest composition is strongly influenced by disturbances, both natural and human-caused, and tree species generally have longer potential life spans than the intervals between large disturbance events.

The most common forms of natural disturbance in Southeast Alaska are windthrow, mass wasting, and flooding. Fires rarely occur due to the cool, marine climate. Relatively frequent, low-magnitude, natural disturbance maintains the uneven-age structure of the old-growth vegetation by creating gaps which seedlings can exploit. Low-intensity disturbance commonly results from windthrow, insect infestation, disease, or small landslides (Martin et al. 1995).

Forest Diseases

All forests are subject to disease. Disease causes a loss of merchantable timber volume through death, decay, reduced growth rates, and decreased seed viability. Decays are of primary importance since the stands are essentially old growth. Western dwarf-mistletoe and a complex of low-level endemic diseases are of lesser economic importance (Laurent 1974).

Losses from tree diseases are high principally because of the old-growth structure of our forests. As trees mature and their vigor declines, they become more subject to disease. Conifers less than 100 years old have little decay. After 100 years, the probability of a tree having rot increases rapidly. By 200 years, 65 percent of the cedar, 50 percent of the hemlock, and 20 percent of the spruce contain some rot (Harris and Farr 1974).

Decay caused by heart- and root-rotting fungi is probably the greatest single cause of timber volume loss in the forest of Southeast Alaska at this time. The decays not only cause loss due to destruction of wood, but also increase logging and milling cost (Laurent 1974).

Hemlock dwarf-mistletoe is the most important stem disease. Although dwarf-mistletoe produces some of its own food, most of its nutrients are obtained from its host. This reduces vigor, growth, and quality of hemlock. Sitka spruce is rarely infected. Mistletoe can best be controlled by harvesting mature stands. Clearcutting and the removal of all infected trees effectively control its spread. In young stands, mistletoe is not a serious problem except where infected trees are left after logging. Thinning and removal of infected stems may control the spread of mistletoe in young stands.

As old-growth stands are converted to young growth, losses from disease will decline. An extensive forest disease survey of young, well-stocked stands found them to be in generally good health (Harris and Farr 1974).

Yellow Cedar Decline

Decline and mortality of yellow cedar is the most spectacular forest problem in Southeast Alaska. Cedar decline is evident within the Project Area. Areas of heaviest decline occur along the western edge of Duffield Peninsula, the general area of Fish Bay, and in areas south of Fish Bay to St. John Baptist Bay. In most cases, it appears that yellow cedar decline is tied to soil drainage. Areas of heaviest decline appear to be associated with poorer soil drainage. As trees die, soil moisture further increases, exacerbating the problem. It is evident that decline has been occurring for a long time. Many areas have standing and down dead cedar with a relatively vigorous understory.

Wind

Wind is probably the single most important agent of natural disturbance within forests in Southeast Alaska. Large-scale blowdowns occur relatively infrequently. Smaller-scale wind events, which result in the loss of one to several trees, occur on a relatively frequent basis. Wind causes both uprooting of the tree and snapping of the stem or branches. As trees continually grow taller and develop wider crowns, they become increasingly more susceptible to wind. Trees build up resistance to prevailing winds as they grow. Winds that blow trees over are unusually strong, affect trees that have recently become exposed, or come from an unusual direction. The immediate effects of winds are to make growing space available by removing shade and killing tree roots. Overturned trees create hummocky soil conditions and mixed soil horizons, creating raised, mineral seed bed microsites suitable for germination of tree seedlings; Sitka spruce is particularly adapted to this mechanism for seedling germination.

Wind has played a major role in the development and maintenance of forest stands within the Project Area. Generally speaking, large-scale blowdowns are absent from the area. The major wind disturbance mechanism has been one of frequent smaller-scale events creating canopy gaps through either windthrow or snapping of tree tops. This has resulted in the majority of the Project Area being in an uneven-aged condition, with this structure maintained through the frequent low-intensity disturbances associated with wind.

Landslides

As discussed in the Soils section of this chapter, landslides are an important agent of disturbance in Southeast Alaska forests. Landslide tracks are common throughout Southeast Alaska. Although landslides generally occur with less frequency than windthrow, they result in more dramatic and visible disturbance effects. Landslides generally remove all buried seeds, advanced regeneration, stumps, and other organic matter and expose mineral soil material or bare rock in the area. In Southeast Alaska, landslides are often associated with steep, highly dissected mountain slopes. Trees are commonly swept away from these sites. Pioneer or disturbance species such as Sitka alder, salmonberry, devil's club and stink-currant tend to dominate these sites for many years.

Floodplains, Wetlands, and Riparian Areas

Like much of Southeast Alaska, the Project Area contains a large proportion of floodplains, wetlands, and riparian areas. Approximately 2,282 acres (2 percent) of the Project Area (156,003 acres) are classified and mapped as floodplain, 53,948 acres (35 percent) as wetland, and 15,359 (10 percent) acres as riparian. Table 3-4 displays the acreage and distribution by VCU of floodplains, wetlands, and riparian areas in the Project Area, and the percentage of each affected by previous timber harvest and road construction.

Table 3-4

Roaded and Harvested Areas in Floodplains, Wetlands, and Riparian Areas (in acres)

VCU	Floodplains			Wetlands			Riparian Areas		
	Total	Roads and Units	% of total	Total	Roads and Units	% of total	Total	Roads and Units	% of total
287	847	576	68	18,927	293	2	3,977	1,006	25
288	73	0	0	4,538	0	0	482	0	0
289	263	155	59	3,767	48	1	750	249	33
290	56	46	82	2,429	49	2	430	89	21
291	0	0	0	3,749	104	3	1,845	1,345	73
292	413	388	94	4,733	112	2	3,037	1,712	56
299	595	504	85	3,587	127	4	2,369	1,135	48
300	0	0	0	3,901	167	4	1,144	398	35
301	0	0	0	1,125	98	9	706	357	51
302	35	16	46	7,191	73	1	646	91	14
Total	2,282	1,611	71	53,948	1,172	2	15,359	6,381	42

Source: GIS data. Note: there are overlapping acres.

Floodplains and wetlands are uniquely sensitive, high-value ecosystems which have been identified in law and regulation as requiring special management. Each of these areas is strongly influenced by either the periodic, persistent, or peripheral presence of fresh water. As a result of this hydrological relationship, each area has a unique set of soil, water, and vegetative characteristics and requires a unique set of management considerations.

Federal agencies are required to avoid, to the extent possible, activities which might result in negative effects associated with the occupancy or modification of these areas. The actions we propose in the Project Area minimize activities in the floodplains, wetlands, and riparian areas.

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Floodplains

Executive Order 11988 directs Federal agencies to:

- avoid the direct or indirect support of floodplain development whenever there are practicable alternatives,
- evaluate the potential effects of any proposed action on floodplains,
- ensure planning programs and budget requests reflect consideration of flood hazards and floodplain management, and
- prescribe procedures to implement the policies and requirements of the Order (USDA Forest Service 1991).

Floodplains are composed of sediment carried by a stream or river and deposited in slow water sections of channels during floods. Floodplains are defined as areas subject to a one percent or greater chance of flooding in any given year. Many streams have a floodplain. The floodplain may extend just a few feet for small streams to several hundred feet for the broad valley bottom streams. Rodman Creek, Fish Bay Creek and Nakwasina River have large-scale floodplains. Floodplains are usually associated with Class I streams and larger Class II streams, and are rarely associated with Class III streams. Nutrient-rich sediments underlain by coarse-textured sediments make floodplains the most productive lowland timber, wildlife, and fisheries resource sites in the Project Area (USDA Forest Service 1991).

The largest floodplain stream systems within the Project Area are typically found in the broad, flat, alluvial U-shaped valleys such as Nakwasina River. They support riparian plant communities having an overstory of Sitka spruce, or Sitka spruce and western hemlock. The shrub understory is variable and may include blueberry, skunk cabbage, devil's club, salmonberry, and alder. The herb understory is dominated by ferns and broad leaf plants (USDA Forest Service 1991).

Flooding may occur in a variety of land types, including steep, narrow mountain canyons; wide, flat alluvial valleys; lake shores; coastal areas; and alluvial fans. To date, no known area-wide flood hazard or flood insurance studies have been conducted in the Project Area. Soils and landform inventory data are the only available information for making initial determinations of the location and approximate boundaries of floodplain areas (USDA Forest Service 1991).

Wetlands

Executive Order 11990, as amended, requires Federal agencies that exercise statutory authority and leadership over Federal lands to avoid to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands. Where practicable, we must avoid direct or indirect support of new construction in wetlands. We are required to preserve and enhance the natural and beneficial values of wetlands in carrying out our responsibility for 1) acquiring, managing, and disposing of lands and facilities; 2) providing Federally undertaken, financed, or assisted construction and improvements; and 3) conducting Federal activities and programs affecting land use. Sections 404(f)(1)(A) and (E) of the Federal Clean Water Act specifically exempts silviculture, timber harvesting, and related road construction activities from permit requirements for the discharge of dredge and fill material in wetlands (USDA Forest Service 1991).

The Army Corps of Engineers (ACOE) and the Environmental Protection Agency (EPA) jointly define wetlands as: "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (ACOE 1987)."

These two agencies (ACOE and EPA) signed a Memorandum of Agreement that provides clarification and general guidance regarding the level of mitigation necessary to demonstrate compliance with the Clean Water Act in connection with standard Section 404 dredge and fill permits. The President's Domestic Policy Council is charged with developing recommendations regarding the attainment of the goal of "no net loss" of the Nation's wetlands. This Council will consider the challenges posed in Alaska, a state where a high proportion of developable land is wetlands and where technical difficulties exist regarding opportunities for compensatory mitigation. Our objective is to support the President's Domestic Council assignment during project planning (USDA Forest Service 1991).

The Forest Service (DeMeo and Loggy 1989) has developed wetland identification procedures specific to Southeast Alaska's vegetation communities. This procedure evaluates the vegetation and soil layers of the GIS database and then assumes the presence of the wetland hydrological criteria. This work was based in part on a U. S. Fish and Wildlife Service report on classification of wetlands and deep water habitats (Cowardin et al. 1979).

Wetlands influence flood flow moderation, groundwater recharge and discharge, wildlife and fish habitat, and water quality. In the Project Area, wetlands range from sea level to alpine. They include forested sites on poorly and very poorly drained organic soil, and poorly and somewhat poorly drained mineral soils. Nonforested or open sites of herbaceous plants are found on poorly and very poorly drained organic soils (muskegs). The wetlands within the Project Area are classified into four basic wetland systems:

- estuarine wetlands;
- muskegs, scrub-shrub, and forested wetlands;
- lakes and ponds (see Water section); and
- river and stream wetlands (see Water section).

Estuaries

Estuaries are those land areas that are predominantly intertidal, and are those parts of the rivers or streams or other bodies of water having an unimpaired connection with the open sea, where the sea water is diluted with fresh water derived from land drainage. Since the Forest Service is not chartered to manage ocean areas, the Forest's wetland inventory data does not cover the areas below mean-high tide (USDA Forest Service 1991). For the Project Area the estuaries include over 2,437 acres. Estuaries comprise approximately 5 percent of the inventoried wetland acres in the Project Area. These acres include areas mapped as both intertidal mudflats and emergent estuaries and are derived from the Common Land Unit (CLU) layer in GIS [USDA Forest Service Land System Inventory (LSI) Draft User Guide].

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These estuaries are characterized by sparsely vegetated mud flats inundated daily by moderate and high tides; by sedge marshland inundated by high tides; and by mixed forb grassland inundated only by extremely high tides. The upland portions of the estuaries are dominated by highly productive sedge communities and the emergent areas by diverse compositions of fescue, other grasses, and mixed forb plant communities (USDA Forest Service 1982).

Estuary streams may have either single or multiple channels. These channels are low gradient and shallowly incised. Most of these channels are comprised of fine silt or sands, but they may also possess bedrock, boulders, cobbles, and coarse gravel. Although estuary streams are rated as being well confined and having excellent containment, they may overflow their banks during periods of flooding. The mineral soils of the estuaries are a result of deposition by these associated estuary streams (USDA Forest Service 1990a).

Muskegs, Scrub-Shrub Wetlands, Forested Wetlands (Palustrine Wetlands)

Palustrine wetlands include all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens. Palustrine wetlands comprise approximately 94 percent of the inventoried wetland acres in the Project Area. Three general classes of palustrine wetlands have been identified for the Northwest Baranof Project. These include muskegs, scrub-shrub wetlands, and forested wetlands (USDA Forest Service 1991). These three classes are described below.

Muskegs - Muskegs, the most unique and distinct of the palustrine wetlands, comprise 43 percent of the inventoried palustrine wetland acres and 40 percent of the total mapped wetland acres within the Project Area (Table 3-5). The term "muskeg" denotes a bog in the northern part of North America, characterized by an abundance of sphagnum moss and greater or lesser abundance of shrubs and low trees. In Southeast Alaska, all relatively open bogs that have a ground cover high in sphagnum mosses and/or sedges are called "muskegs" (USDA Forest Service 1991).

Muskegs in Southeast Alaska have poorly drained organic soils that range from less than 2 feet to over 40 feet. Depending on the muskeg type, the soil may consist of decomposed remains of sphagnum moss, sedges, shrubs, forbs, and wood. Vegetation growing on muskegs relates to the organic material present, which in turn is related to the near-surface water table and its movements. Muskegs may be associated with lakes or streams. Streams associated with muskeg ecosystems generally will have a single, low gradient, confined channel (USDA Forest Service 1990a).

Scrub-Shrub Wetlands - Scrub-shrub wetlands are the most vegetatively varied wetland in Southeast Alaska. They comprise approximately 20 percent of the inventoried palustrine wetland acres and 17 percent of the total mapped wetland acres within the Project Area (Table 3-5). Soil drainage on these wetland areas, depending on soil type, ranges from poorly to very poorly drained. They are dominated by woody vegetation less than 20 feet tall, depending on the plant association. Plant species may include true shrubs, young trees, and trees and/or shrubs that are small or stunted because of environmental conditions. Scrub-shrub wetlands in the Project Area are associated with two broad wetland plant communities: scrub-shrub evergreen/muskeg, and forested scrub-shrub evergreen/muskeg (USDA Forest Service 1991).

Forested Wetlands - Forested wetlands comprise approximately 37 percent of the inventoried palustrine wetland acres and 34 percent of the total mapped wetland acres in the Project Area (Table 3-5). Soil drainage, depending on soil types, ranges from somewhat poorly to very poorly drained. Vegetation ranges from scrubby mixed conifer forests on the poorly drained sites to moderately productive mixed conifer, western or mountain hemlock stands on somewhat poorly drained sites. Shrubs and forbs dominate the understory. Like muskegs, these forested wetlands may be associated with either streams or lakes, but for the most part these wetlands are simply associated with wet ground. (USDA Forest Service 1991).

Table 3-5
Wetlands (in acres)

VCU	Estuaries	Lakes/Ponds	Muskegs	Scrub/Shrub	Forested Wetlands	Total Wetlands
287	697	237	8,046	2,650	7,297	18,927
288	151	45	2,673	205	1,463	4,538
289	202	3	1,191	531	1,840	3,767
290	13	3	926	501	986	2,429
291	233	9	1,509	1,348	650	3,749
292	428	6	1,529	2,256	514	4,733
299	280	273	528	1,801	705	3,587
300	267	74	1,379	366	1,815	3,901
301	55	8	298	281	483	1,125
302	111	235	3,867	151	2,828	7,192
Total	2,437	893	21,946	10,089	18,581	53,948

Source: GIS

Riparian Areas

Riparian areas are directly influenced by water, and include trees and other plants that live and grow near water on the banks of streams, rivers, and lakes. The vegetation under the trees is usually abundant, with a wide variety of shrubs, grasses, and wildflowers.

When flood water overflows the banks of a stream or river, riparian vegetation slows the flood water so that it can no longer carry its load of sediment and the sediment settles out. The vegetation quickly grows through this sediment, stabilizing it with roots and covering it with plants that use the nutrients that could otherwise harm downstream water quality. Riparian areas also filter runoff and sediment from slopes next to the stream (USDA Forest Service 1990).

Healthy riparian areas act like a sponge and take in water readily. Water slowed by riparian areas enters the groundwater and some of it is released later, increasing late

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summer and fall stream flow. Riparian areas produce an abundance of cover and shade. The shade keeps water temperatures cool for fish. The vegetation cover provides shelter, food, and temperature relief for many birds and other animals (USDA Forest Service 1990).

Existing pristine riparian areas on the Forest are in very good condition. They support, for the most part, old-growth riparian habitat and associated dependent species. Riparian ecosystems harvested for timber prior to TTRA are now in various states of regeneration. Portions of the riparian areas along Rodman Creek, Adams Creek, Duffield Valley, Fish Bay Creek, Nakwasina Creek, Lisa Creek, and Noxon Creek have previously been harvested. Some areas were selectively harvested as early as 1918 and as recently as the mid 1940s. Clearcut harvesting occurred in all of these areas in the 1950s and 1960s. In some cases, the clearcut harvest was done in the same area as the selective harvest. The logging methods included steam donkey, tractor, and highlead logging. In most of the harvested areas, these methods produced enough soil disturbance to promote red alder regeneration. The amount of alder regeneration compared to conifer is often related to the amount of soil disturbance on the site. Riparian areas harvested with very little soil disturbance regenerate immediately back to spruce and hemlock.

The overstory is highly variable in species composition, tree size, and density. Current stands are a mixture of red alder (50% to 95%), Sitka spruce, and western hemlock. The conifers, primarily spruce, have a wide distribution of diameters with most being in the smaller sizes. In some harvested areas, individual conifers were not logged. These trees often grew faster after the surrounding trees were removed. They are often larger in height and diameter than the surrounding stand. The alder tends to have a more uniform size distribution with fewer in the smaller and larger sizes.

The amount of understory vegetation ranges from low to abundant. It is often highest where tree regeneration is sparse. Higher quantities are also found under the alder overstory and lowest amounts beneath the dense conifer regeneration. The range of species include shrubs, ferns, mosses, and herbs.

In most cases, alder germinated following the harvest disturbance and grew rapidly in height. Slower growing Sitka spruce and western hemlock established underneath the alder canopy. Eventually the conifers (primarily Sitka spruce) are expected to grow above the alder overstory and take over the site. In areas where the soil disturbance was greater, few to no conifers have established under the alder. These areas are expected to regenerate in the same manner; however, the time required to reach a conifer overstory will be much longer.

Roads were constructed through riparian zones to access the harvested areas creating additional soil disturbance. Borrow pits were also developed to provide rock for the roads. Some road corridors and associated borrow pits within the riparian areas have not regenerated due to the intensity of the disturbance, while other roads have regenerated with alder.

Selected sections of alder-dominated riparian areas along Fish Bay Creek were thinned in 1990. Similar thinning also occurred along Duffield Creek in the early 1980s. Portions of the thinnings were done at varying intensities to evaluate the effect of alder thinning on the length of time needed to regenerate large conifers. In portions of the riparian areas

along Noxon Creek, some alder were girdled and left standing to promote conifer regeneration and growth. Some conifer regeneration was damaged from a blowdown that followed the girdling, while falling of the larger alder also resulted in some damage to leave trees.

Fish and Water

Fish

Class I streams have anadromous fish habitat.

Class II streams have resident fish populations, but no anadromous fish.

Class III streams do not have fish, but influence downstream water quality and fish habitat.

The aquatic resources of the Project Area are important to the subsistence, recreational, and commercial users of Southeast Alaska. These abundant aquatic systems provide spawning and rearing habitats for salmon and resident fish. Maintenance of this aquatic habitat and associated high water quality is essential for maintaining species abundance and diversity. It is also a focal point of Federal and State natural resource agencies, public and private organizations, and concerned individuals.

Anadromous fish species within the Project Area include pink (humpback), chum (dog), and coho (silver) salmon, steelhead trout, and Dolly Varden char. Resident game species include cutthroat, rainbow trout, and resident Dolly Varden char. These aquatic resources are important to sport, commercial, and subsistence users of the area.

There are over 136 miles of Class I fish streams, 153 miles of Class II streams, and 205 miles of mapped Class III streams (Table 3-6). In the Project Area, many streams which are less than 1 mile long remain unmapped. The unmapped streams are predominantly very small (less than 1 meter wide), mountain slope, wetland and floodplain drainages.

Large Woody Debris

Fish biologists refer to downed trees and logs within the stream channel as “large woody debris” (LWD). Large trees with intact rootwads which fall in floodplain channels anchor firmly in the substrate and collect smaller logs, sticks, sediment, and forest litter. Generally, the more complex and numerous the debris jams, the deeper the pool it creates, and the greater the ability to support rearing fish. LWD is recognized as playing an important role in channel morphology, storing and routing of sediment and organic matter, and creating fish habitat. Periodic entry of LWD into the aquatic system is desirable to maintain stream habitat diversity and stability. Large amounts entering abruptly can be detrimental to the aquatic ecosystem by becoming a physical barrier and causing bank erosion and channel migration problems.

Much of the nutrients entering streams are from leaves, insects and other organisms falling into streams from riparian vegetation. LWD traps these energy sources, lengthening the time they are available to the aquatic food chain. LWD also traps bedload sediments moving through the system. Stable streambeds with perennial flow are highly productive sites for aquatic insects that graze on algae-covered rocks, or microorganisms that feed on debris.

Stream Condition

Many watersheds were logged extensively between 1950 and 1970. Each of these streams has had logging along the edge of the main channel, and across smaller tributaries and side channels. A summary of impacts and rehabilitation activities along important creeks and streams is provided below.

Rodman Creek - VCU 292

Soil disturbance occurred on portions of the floodplain during previous logging. Machine tracks and log skidding damaged some channels by crushing banks, introducing sediment, and removing the organic layer of the adjacent soil, which increased surface erosion. Rodman Creek is listed as a “suspected” watershed according to the EPA’s Impaired Watershed list due to timber harvest. However, there have been no significant trends in pink or chum salmon escapement (Halupka et al. 1995a, 1995b).

Adams Creek (also known as Rodman Bay SW) - VCU 292

In 1989, a 5-acre debris avalanche within a regenerating clearcut timber stand crossed Adams Creek and formed a temporary dam. The dam broke, depositing sediment and trees downstream and causing floodplain changes. Channel shifting washed out a one-acre pond near the estuary which had provided important overwinter rearing habitat for coho salmon.

In 1989, the Forest Service completed a watershed restoration project on Adams Creek (Suminski 1989). We constructed 21 LWD structures in a moderate-gradient tributary channel to improve overwinter habitat for coho salmon. All structures were still functional in 1994. In addition, two ponds were linked by a small channel to the main river, giving coho salmon and Dolly Varden char access to about one acre of productive rearing habitat. We also fertilized the five-acre landslide then planted grass and spruce trees to reestablish vegetative cover and stabilize the slope.

Fish Creek - VCU 287

In 1980, the Forest Service removed logging debris and natural windfall from the creek (Inghram 1980). Some culverts on the Fish Bay road system have plugged with bedload or woody debris, resulting in erosion of road prisms. Log bridges were removed using explosives to prevent blocking fish passage should the bridges collapse.

St. John Baptist Bay - VCU 302

The head of St. John Baptist Bay is the site of ongoing surveys by the National Marine Fisheries Service (NMFS) to study sablefish biology. Of 67 sites surveyed in Southeast Alaska since 1986, St. John’s is the only bay that had large numbers of juvenile sablefish every year.

Noxon Creek - VCU 300

Loggers salvaged large trees from the stream during past logging. In 1967, at the request of biologists, they removed an estimated 25,000 board feet of timber from two log jams. Roberts (1968) observed that deep pools rapidly filled with gravel after debris removal, and extensive gravel bars and rising stream beds developed downstream from the debris removal sites. ADF&G removed LWD from the first mile of the stream in 1972. Bryant, et al. (1992), reported channel scour at log removal locations. The degradation resulted in incised banks with reduced cover, relatively high stream velocities, and little usable fish habitat. Downturning on one channel after debris removal resulted in reduced flow to a side channel, where fish get stranded in isolated pools during periods of low flows.

Nakwasina River - VCU 299

Nakwasina River is one of the largest fish producers in the area. It provides habitat for chum, coho, and pink salmon. Portions of the Nakwasina watershed were chemically treated with 2, 4-D spray in June 1968 to inhibit red alder growth in harvest areas. The

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Institute of Northern Forestry conducted bioassay experiments to determine the effect of the herbicide on Dolly Varden char, coho salmon and various aquatic insects. Sears and Meehan (1971) reported no mortalities or distress attributed to the spray.

Water

The Project Area is characterized by an abundance of water. This low elevation, coastal rain forest lies within the area affected by the dominant maritime climate of Southeast Alaska. This climate produces heavy precipitation and relatively cool summers and mild winters. The result is great quantities of water falling, primarily as rain at lower elevations and snow at the higher elevations. This precipitation is the source of the many rivers, streams, lakes, ponds and wetlands in the Project Area. These water resources are important for the vegetation, wildlife, fish, subsistence, recreation, and scenic resources of the area.

Rivers and Streams

The Project Area includes approximately 17 major watersheds whose streams terminate at saltwater. These watersheds contain over 493 miles of inventoried rivers and streams (Table 3-6). Important watersheds include Rodman Creek, Fish Bay Creek, and Nakwasina River.

Table 3-6
Miles of Stream by Stream Class for Each VCU

VCU	Class I		Class II		Class III		Total Stream Miles
	Miles	No. Of Streams	Miles	No. Of Streams	Miles	No. Of Streams	
287	29.6	131	62.4	175	49.1	118	141.1
288	6.5	28	8.6	28	6.4	15	21.5
289	9.1	37	3.2	12	16.0	37	28.3
290	1.7	12	8.4	29	6.7	22	16.8
291	13.9	48	7.0	25	18.9	35	39.8
292	24.5	89	12.1	43	35.9	82	72.5
299	14.2	46	25.7	158	33.0	77	72.9
300	14.2	50	8.6	28	21.5	52	44.3
301	5.2	18	4.1	8	7.9	19	17.2
302	16.6	59	12.7	40	9.4	26	38.7
Total	135.5	518	152.8	546	204.8	483	493.1

Source: Kelliher 1993.

Stream Flow

The average annual precipitation within the Project Area varies spatially and with elevation due to the effects of mountains. Similarly, streamflow varies in response to precipitation.

There are two yearly peak streamflow periods; one occurs in the spring during the snowmelt season and the other during the heavy rains of fall. Lakes and permanent snowfields are important reservoir features in several basins. These features provide storage capability that helps regulate the annual streamflow.

Most rivers and streams in the Project Area possess stream characteristics and channel morphology that reflect natural processes and show no apparent impact from past human activities. Others display obvious modifications and effects of the historic logging that occurred in and around these channels. Furthermore, high bedload in stream channels resulting from landslides have also affected many stream channels in the Project Area.

In watersheds with wider floodplains and riparian corridors, bedload and sediment delivered from high-gradient V-notch channels is often trapped before entering the mainstem channels of streams, minimizing the impact of landslides on stream habitat. Muskegs and riparian zones store water and act as sediment traps along many streams in the Project Area. Water stored in these areas is released over time and maintains baseflow in streams.

Water Quality

Water quality within the Project Area is generally good. Stream chemical components and water temperatures for all drainages in the Project Area are within standards established for the growth and propagation of fish by Alaska State water quality criteria (ADEC 1989). There are 84.8 total miles of existing road (including spur roads) in the Project Area. Of these, 55.0 miles are located within riparian habitat. Culvert and bridge failures have occurred along the roads in several VCUs, resulting in sedimentation (e.g., Nakwasina River, Fish Bay, Adams Creek). Sedimentation is not a significant problem in most Northwest Baranof watersheds. Rodman Creek and Nakwasina River are listed on the EPA's Impaired Watershed List under the "Suspected" category, due primarily to riparian zone timber harvest which occurred in the past. Spawning gravel quality, fish habitat diversity, and channel stability have been impacted by previous riparian logging and road construction activities.

Lakes and Ponds

The lakes in the Project Area include small muskeg ponds and alpine lakes. There are a few lower elevation lakes within the Project Area that provide sport fishing opportunities, but none with commercial importance. Unlike other areas of Baranof Island, lakes are small in relation to the total land area (Table 3-5).

Wildlife

The Tongass National Forest provides habitat for over 350 species of mammals, birds, amphibians, and reptiles. Many of these species can be found in the Project Area. Two notable exceptions are black bear and wolf, which are not found anywhere on Baranof Island. Most species are permanent residents of the Project Area, while others are regular or casual visitors to the area. Wildlife are found in a diverse range of land types and plant communities, and are adapted to climatic extremes, changes in habitat, predation, and hunting pressure. This results in a Project Area rich in both species and habitats. This wildlife richness is appreciated and valued by the public for many reasons. The wildlife in the Project Area may be viewed and photographed; harvested for sport, or subsistence purposes; and valued for spiritual or ecological reasons. As a result, wildlife is an important resource within the Project Area.

Wildlife Habitats

Habitat is the environment in which a wildlife species occurs. We describe this environment in physical and biological terms. Our descriptions include elevation, topography, forest structure and vegetation type. A wildlife species may occupy a range of habitat types over the course of a year. Important habitat types that occur in the project area include beach fringe, estuary fringe, old growth, second growth, alpine/subalpine, and riparian areas.

Beach Fringe Habitat

Beach fringe is the land within a 500-foot horizontal distance inland from the shoreline along the entire coastline but not including the area of land already within the estuary fringe (so that acres are not double-counted). Areas within 500 feet of the ocean shoreline are transitional zones between land and water, salt water and fresh water, and vegetated and nonvegetated conditions (Forest Service 1979). Forested areas in this transition zone receive heavy use by species which have high economic, recreational, subsistence, or aesthetic values. Brown bear, river otter, bald eagle, marten, and Sitka black-tailed deer are typical species that concentrate their activities during some or all seasons in these forest stands.

Estuary Fringe Habitat

Estuary fringe is the land within 1,000 foot horizontal distance around estuaries. The estuary fringe is similar to beach fringe, but because of species diversity, has greater value to wildlife, especially brown bears, river otters, mink, bald eagles, and waterfowl.

Riparian Habitat

Riparian areas occur along rivers and streams or around inland lakes, and contain elements of both aquatic and terrestrial ecosystems. Riparian areas are important migration routes for some wildlife species, and serve as travel routes for numerous species because of the presence of water, food, and cover. Riparian habitats in the Project Area are extremely important for eagles, furbearers, and brown bears.

Old Growth Habitat

Old-growth habitats are ecosystems distinguished by old trees and related structural attributes. Old-growth habitat encompasses the later stages in stand development. Typically, old growth differs from earlier stages by the number of canopy layers, species composition, tree size, accumulations of large woody debris, and ecosystem function. With respect to younger forests, old-growth forests typically possess the following attributes: 1) large trees; 2) wide variation in tree sizes and spacing; 3) accumulations of large, dead, standing and fallen trees; 4) a high incidence of trees with broken or deformed tops and bole or root decay; 5) multiple canopy layers; 6) canopy gaps and understory patchiness. These characteristics together with the spatial arrangement of these forests on the landscape, influence the function of this ecosystem.

These and other characteristics make old-growth forests important habitat for Sitka black-tailed deer, marten, brown bear, and birds such as the brown creeper. Old-growth forest acres are also included in beach fringe, estuary fringe, riparian and other habitat areas. For purposes of this section, old-growth was considered as those forest stands with a timber volume greater than 8,000 board feet per acre, at least 150 years old and with trees with an average diameter at breast height greater than 9 inches.

Second Growth Habitat

Second-growth forests for the purposes of this section are areas that have been commercially clearcut. Large-scale second-growth stands are of lower value to wildlife such as deer, marten, and brown bear because conifer seedlings aggressively invade and eventually shade out desirable herbaceous vegetation.

Alpine/Subalpine Habitat

Alpine/subalpine is land at or above treeline, including unvegetated areas of permanent snow and ice; open meadows of grasses, forbs, and shrubs; and scrub forest (Sidle and Suring 1986). Alpine/subalpine habitat within the Project Area is generally above 1,500 feet in elevation. These habitats are important summer foraging areas for deer and brown bear and seasonally used by mountain goats.

The acres of these habitats in the Project Area are displayed in the following table.

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Table 3-7
Acres of Wildlife Habitat in the Project Area

Habitat Type	Acres in 1956	Acres in 1994	Percent Change
Beach Fringe	3,949	3,211	-18.7
Estuary Fringe	4,852	3,871	-20.2
Riparian	15,053	8,742	-41.9
Old Growth	63,858	51,651	-19.1
Second Growth	497	10,070	+1926
Alpine/Subalpine	30,604	30,604	0

Source: Hartmann 1995. Note that these habitats do overlap.

Management Indicator Species

Management Indicator Species (MIS) are species which are believed to best represent the habitat requirements of a larger set of species requiring similar habitats. Through the application of the MIS concept, the total number of species to be analyzed within a project area is reduced to a manageable set of species that collectively represent the habitats of other species, and associated management concerns.

The MIS species chosen for this Project Area were the Sitka black-tailed deer, brown bear, river otter, marten, mountain goat, brown creeper, and bald eagle. These species best represented the habitats in the Project Area and in general, more is known about these species. Additionally, these were the species of most concern, based on our scoping process.

Other species such as red squirrel, red-breasted sapsucker, hairy woodpecker and Vancouver Canada goose were considered and analyzed to varying degrees, but it was determined that the selected MIS species represented the preferred habitat type of these other species. Information on these species is contained in the planning record.

Preferred habitats are most important to the MIS and are displayed in Table 3-8.

Table 3-8
Wildlife Species and Preferred Habitats

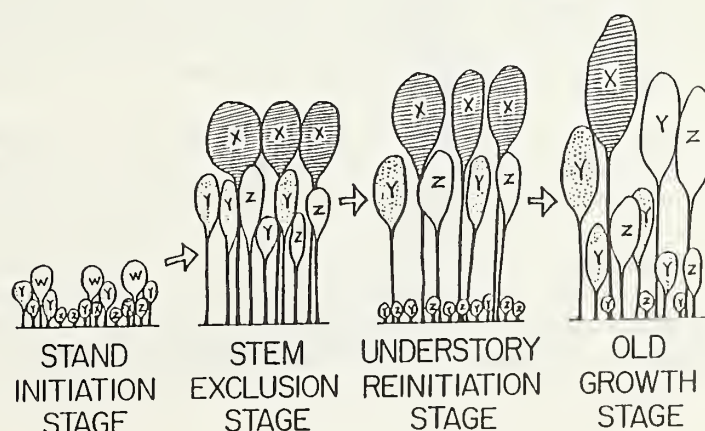
Species	Preferred Habitats					
	Beach Fringe	Estuary Fringe	Riparian	Old Growth	Second Growth	Alpine/ Subalpine
Sitka Black-tailed Deer	x	x	x	x		x
Brown Bear	x	x	x	x		x
River Otter	x	x	x	x		
Marten	x	x	x	x		
Mountain Goat				x		x
Brown Creeper				x		
Bald Eagle	x	x	x	x		

Source: Hartmann 1995

Forest Structure Development Through Time

For the first five years following harvest, grasses, forbs, shrubs, and conifer and hardwood seedlings flourish. Six to 25 years after harvest there is an increase in forb and shrub production (stand initiation stage). In an unmanaged stand, crown closure is usually complete by 25 years, causing the understory layer to change from a dense shrub, herb and seedling composition, to one of dense moss. The young trees are small and densely stocked and of a uniform size. These stands exhibit a poorly developed understory and an even-aged overstory that provides low diversity and low habitat value for wildlife (stem exclusion stage). Approximately 100 to 150 years after harvest, understory develops and some features of old-growth structure occur (understory reinitiation stage). After 150 years, old-growth forest structure is fully developed (old growth stage). See Figure 3-1, below.

Figure 3-1
Forest Structure



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Table 3-9 shows the relative importance of conifer structural stages for MIS.

Table 3-9

Relative Importance of Conifer Structural Stages and Old-growth Forest Habitats for the Management Indicator Species

Species and Season	Stand Initiation	Stem Exclusion	Understory Reintiation*	Old-Growth Stage 200+ years			
	0 -25 years	26-150 years	150-200 years	<VC4*	VC4*	VC5*	VC6+*
Sitka Black-tailed Deer (1)	L-M	L	L-M	L-M	M	H	H
Brown Bear (3)	L	L	L	M-H	M-H	M-H	M-H
River Otter (2, 3)	L	L	M	L	H	H	H
Marten (1)	L	L	L	L	M	H	H
Mountain Goat (1)	L	L	L	L	M-H	H	H
Brown Creeper (1)	L	L	L	L	L	L	H
Bald Eagle (2, 3)	L	L	L	L	H	H	H

Source: TLMP 1991

H = Highest importance with highest population densities

M = Moderate importance with moderate population densities

L = Least importance with lowest population densities

* considered old-growth habitat

Season codes are as follows:

1 = winter, 2 = spring, 3 = summer, 4 = fall, 5 = all year

VC = Volume Class

"Patch" Old Growth Forest Distribution

The spatial distribution of old-growth forests within the Project Area has been altered by past timber harvest and road construction. Large scale clearcut timber harvesting in the Project Area started about 1956. The result has been the reduction of total acreage of old growth forests, and an increase in the fragmentation of the forest. Fragmentation is the process of breaking contiguous blocks of old-growth forest into smaller areas. This results in the creation of more edge habitat and less core (interior) old growth habitat.

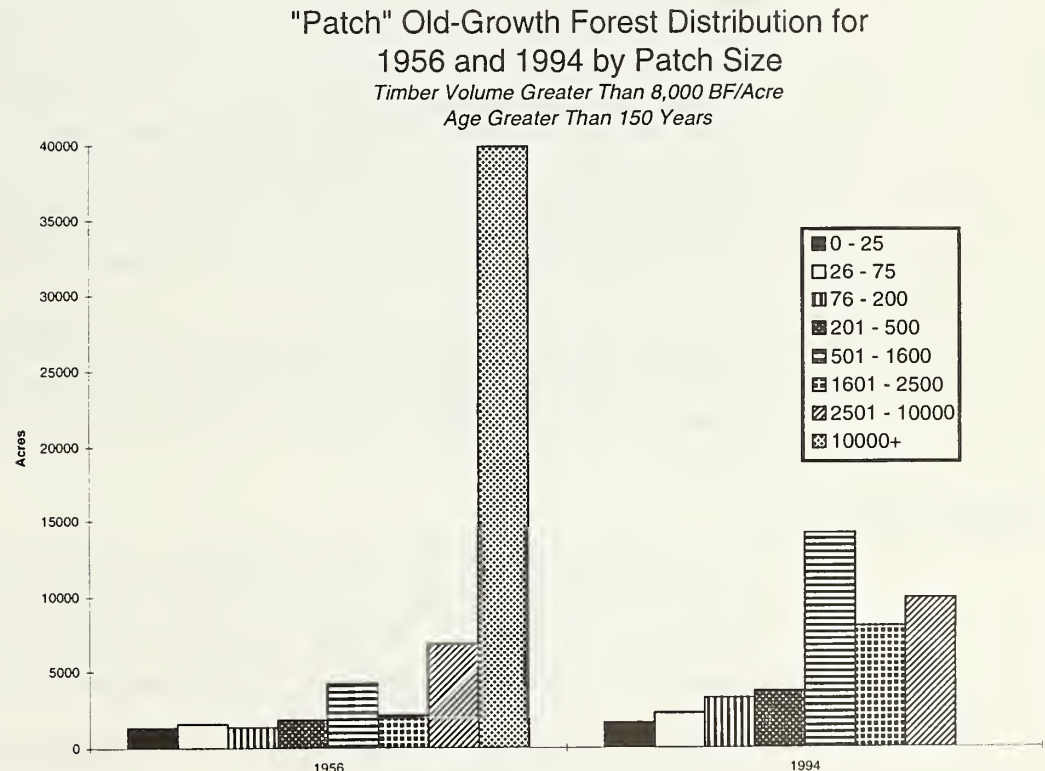
Forest edge occurs where old-growth stands abut second growth or nonforest areas (such as open muskegs or meadows). Within this edge some attributes differ from those that exist deeper within the forest (core), for example temperature, composition of the vegetation, windspeed, and the amount of sunlight. Some wildlife species which inhabit old growth forests prefer interior habitats while other species prefer edge habitats. As fragmentation increases, species of plants and animals that depend on core old growth forest habitat become isolated in islands of habitat or disappear altogether. Results of isolation can range from the elimination of top level predators which require large home range, to declines in populations of lower food chain species (Temple and Wilcox, 1986).

Large contiguous blocks of old-growth forests are generally recognized as an important factor in maintaining viable populations of wildlife.

A GIS analysis was conducted to determine the effects of historical harvest on the amount of core, edge and "patch" old growth forest. Patch is a grouping of contiguous blocks of old growth forests. We use the concept of patch to model the connectivity of old growth forest. We determined patch by buffering core old growth using a system of variable width buffers (Hussey et al. 1989). See Appendix H for maps displaying the old-growth patches for the Project Area. Our analysis determined the percent change in the amount of core, edge and patch from 1956 to the present. Within the Northwest Baranof Project Area, the acres of core old growth has decreased by 34 percent, the acres of edge old growth has increased by 31 percent, and the acres of patch old growth has decreased by 28 percent since 1956.

Because large patch sizes are important, we analyzed the change in distribution of old growth forest by patch size classes. Of the MIS, optimal patch sizes have been determined for three species as follows; Sitka black-tailed deer, greater than 1,600 acres; marten, greater than 200 acres; and brown creeper, greater than 25 acres. In the Project Area, there has been a shift from larger patch sizes to smaller patch sizes. Figure 3-2 displays the changes in patch size class distribution from 1956 to 1994 in the Project Area.

Figure 3-2



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Habitat Capability For the Management Indicator Species

Habitat capability models were developed for each MIS by an interagency team of biologists. These models were developed to meet the needs of the TLMP Revision process. We used these TLMP models to quantify suitability of habitat in the Project Area because they are the best tool currently available for this purpose. Habitat capability models are based on the concepts of habitat and carrying capacity. Each model assigns Habitat Suitability Index (HSI) values to different combinations of habitat variables which are assumed to affect the habitat capability. The habitat variables include forest successional stages, timber volume classes, annual snow depth, elevation, aspect, and presence of water. HSI values range from 0 for unsuitable habitat to 1 for optimal habitat. An optimal habitat with an HSI value of 1 is assumed to support the maximum habitat capability of animals, whereas an unsuitable habitat with an HSI value of 0 is assumed to support no animals. These HSI values are translated into habitat capabilities for each MIS (Suring et. al. 1992).

The terms "habitat capability" and "populations" are not interchangeable. Habitat capability is synonymous with average carrying capacity or the estimated number of animals the habitat can potentially support during a typical year. Population is the estimated number of animals actually present at a given time. Populations may temporarily exceed habitat capability (for example, due to a series of mild winters). However, many populations are frequently below what the habitat is capable of producing due to predation, winter mortality, or other environmental factors.

Given data limitations, the complexity of ecological relationships, and the need to simplify variables for use in the models, actual population sizes may vary considerably from those predicted by the analysis. Habitat Suitability Index (HSI) models rely on the assumption that habitat factors such as vegetation, soils, and surface water features can be identified as characteristics which influence an area's ability to supply a wildlife species with its life requisites. This procedure provides the best available estimate of habitat capability. The habitat capability values are not intended to reflect actual population densities in the Project Area, but are used in relative comparisons of the alternatives. Despite the lack of verification at this time, the HSI models are the best tool we have available for identifying and quantifying habitat values for MIS.

Wildlife models were used to calculate habitat capability for each MIS in the Project. For the analysis of this Project Area, the results may vary plus or minus 2 units due to rounding. Harvest since 1956 is assumed to have been volume class 6. However, some stands may have been of lower volume class, so habitat changes may be slightly over-estimated.

Wildlife Analysis Areas

Much of the data in the wildlife section is analyzed by Value Comparison Units (VCU) and by Wildlife Analysis Area (WAA). VCUs were designated by the Forest Service in the Tongass Land Management Plan (TLMP) to provide a common set of areas for planning and resource analysis. VCUs generally encompass a drainage basin or watershed. WAAs are management units delineated by the Alaska Department of Fish and Game (ADF&G).

WAAs and VCUs included in whole or in part in the Project Area are illustrated in Figure 3-3 and listed in Table 3-10.

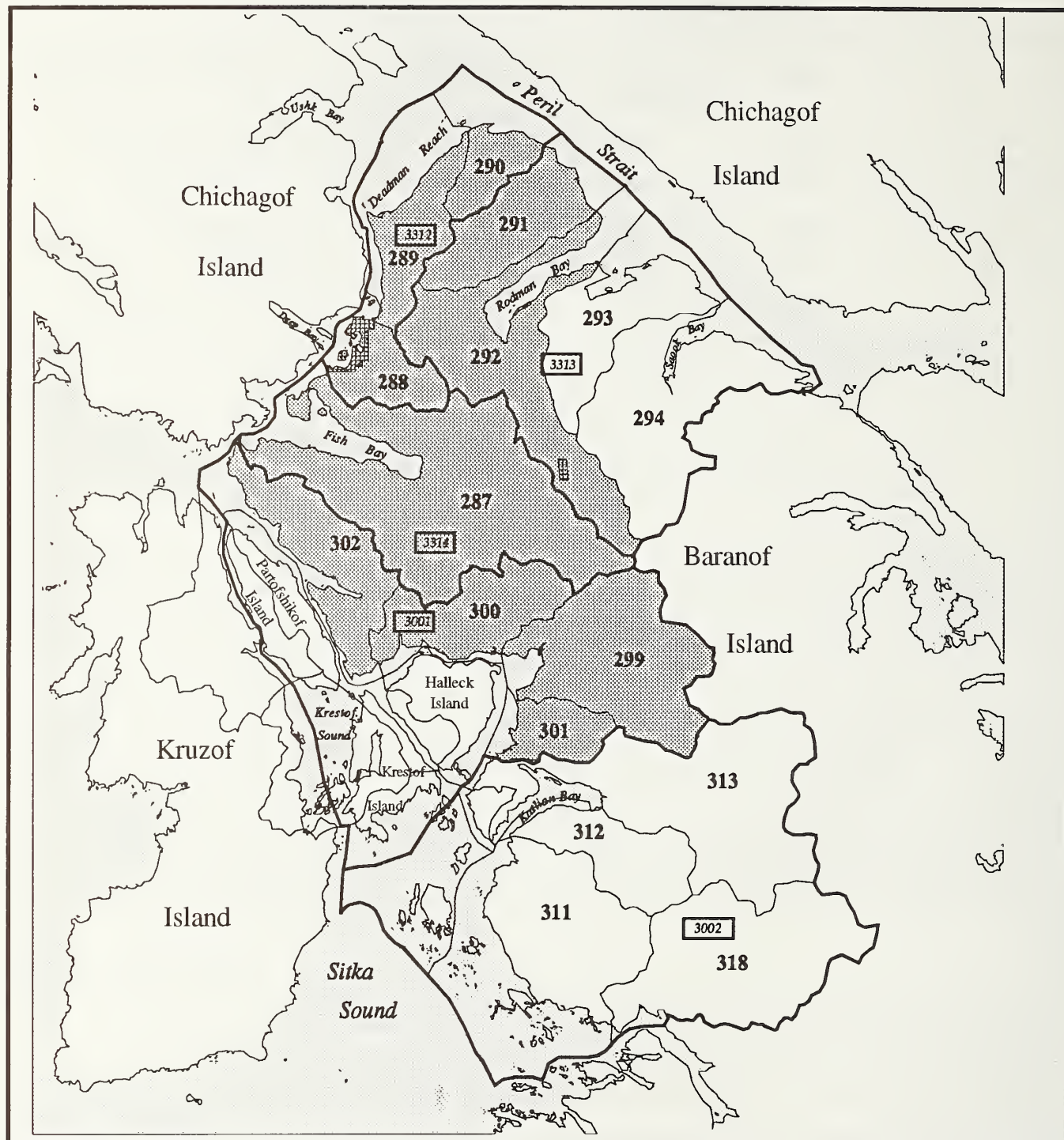
Table 3-10
VCUs Within Wildlife Analysis Areas (WAAs) and Percent of the WAA that the
Project Area Includes

WAA	% of WAA in Project Area	VCUs in WAA	VCUs in Project Area
3001	69%	299, 300, 301, 302, 303, 309, 310	299, 300, 301, 302
3312	100%	288, 289, 290	288, 289, 290
3313	49%	291, 292, 293, 294	291, 292
3314	100%	287	287

Source: Hartmann 1995.

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Figure 3-3
Map of WAAs



Private Lands
Project Area



VCU Boundaries
Wildlife Analysis Area Boundaries

287

VCU Number



Wildlife Analysis Area Identifier



Discussion of Specific MIS

Sitka Black-tailed Deer - *Odocoileus hemionous sitkensis*

Sitka black-tailed deer use all major habitats in the NWB Project Area. As an MIS they represent species using lower elevation old-growth forest habitats during the winter. Deer rely heavily on forested habitats for cover. Much of their feeding occurs in forested areas. In summer, deer range through all elevations including alpine meadows and subalpine forests. They also feed in young clearcuts where forage is plentiful. Winter snows drive them to lower elevations and deep snow forces them to the beach fringe (Hanley 1984).

Winter is assumed to be the most limiting season for the Sitka black-tailed deer (Hanley and McKendrick 1985, cited by Suring et al. 1992). The deer model incorporated the following factors in the analysis: (1) snow conditions, (2) presence of predators, (3) physiographic features including aspect and elevation, and (4) stand size including: (a) volume class of old growth, (b) forest type, and (c) second growth.

Table 3-11 shows habitat capability within the Project Area by WAA for 1956 and 1994. An adjustment for patch size is shown for this species.

Table 3-11
Deer Habitat Capability for Project Area by WAA, 1956 and 1994

WAA	No Patch Adjustment			Patch Adjustment		
	1956	1994	% Change	1956	1994	% Change
3001	2,191	1,895	-13.6	1,131	834	-26.3
3312	507	478	-5.7	198	176	-11.1
3313	1,344	899	-33.1	642	412	-35.8
3314	1,059	948	-10.5	510	454	-11.0
Project Area Total	5,101	4,219	-17.3	2,481	1,876	-24.4

Note: Habitat capability is shown only for the portions of the WAAs within the Project Area. Source: Hawks 1995. Data derived from GIS data base and Suring et al. 1992 and A. Warm, 1995.

Brown Bear *Ursus arctos horribilis*

Ursus arctos horribilis is referred to as a brown bear in coastal Alaska and grizzly bear in interior areas and the remainder of North America. Brown bears are present on the mainland and on the islands north of Frederick Sound and are occasionally reported on Mitkof and Wrangell Islands. Brown bear are present in all Project Area VCUs.

As a MIS, brown bear represent species which use sea level to alpine habitats and require large areas of habitat as well as protection from human disturbance. The distribution of bears corresponds closely to the seasonal abundance and quality of food available. In

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Southeast Alaska, old-growth forest is used extensively by brown bears for foraging, cover, and denning. A patch size adjustment was not performed for brown bears since they have not been identified as species requiring minimum patch sizes of a particular habitat type.

Late summer season is the most critical or limiting period for brown bear (Schoen et al. 1992). During this season, bears concentrate along low-elevation valley bottoms and coastal salmon streams. These are also areas of highest human use as well as areas where most resource development activities occur. The brown bear model evaluates habitat capability during this critical late-summer season (Schoen et al., 1989). This model identifies the following variables: location/elevation, vegetation, and fish abundance.

Previous road construction in the Project Area could also affect brown bears by improved human access and increased disturbance as well as human caused mortality of bears. An adjustment for the effects of roads on brown bears is displayed in Table 3-12.

Table 3-12
Brown Bear Habitat Capability for Project Area by WAA, 1956 and 1994

WAA	Without Road Effects			With Road Effects		
	1956	1994	Percent Change	1956	1994	Percent Change
3001	76	68	-10.5	76	50	-34.2
3312	30	29	-3.3	30	27	-10.0
3313	57	46	-19.3	57	32	-43.9
3314	58	55	-5.2	58	45	-22.4
Total	221	193	-10.4	221	154	-30.3

Note: Habitat capability is shown only for the portions of the WAAs within the Project Area. Source: Hawks 1995. Data derived from GIS data base and Schoen et al. 1992.

River Otter - *Lutra canadensis*

River otters concentrate along intertidal zones and the adjacent beach fringe. They also travel extensively throughout riparian habitats. As an MIS species they represent species which use beach fringe, estuary fringe, riparian and old-growth habitats. Food availability and adequate cover are two factors which affect use of an area by river otter. River otters feed on fish (primarily sculpins and rockfish), crabs, and occasional invertebrates other than crabs (Sidle and Suring 1986).

Preferred river otter habitat must provide adequate shelter in addition to sufficient food (Melquist and Hornocker 1983). The old-growth forests in Southeast Alaska are assumed to provide optimum habitat for river otters (Suring et. al. 1988), with seedling and sapling (i.e., second growth) and pole timber stands providing limited habitat. River otters avoid clearcuts extending to the beach in Southeast Alaska (Larsen 1983) because of lack of cover and density of shrub growth. River otters depend on large woody debris (LWD) in

streamside, lakeside, and beach habitats. The large extensive root systems, downed tree trunks, and overturned root wads of old-growth trees create undercuts and hollows that provide den and resting sites, and cover. From May through July, female river otters use old-growth habitats near streams for inland (up to 0.5 miles from the coastline) dens.

The river otter model evaluates habitat capability during the spring (May through July) because river otters make use of all occupied habitats at this time (Suring et al. 1988). The model incorporated the following factors in the analysis: (1) distance from salt water, (2) beach fringe, (3) estuary fringe, (4) elevation of riparian habitat, (5) volume class, (6) stream class, and (7) lake size.

An adjustment for patch size was not displayed as the river otter prefers edge habitats. A model for road effects was not available. Previous road construction in the Project Area has reduced the amount of river otter habitat, but the amount has not been quantified. Table 3-13 displays the habitat capability for river otter.

Table 3-13
River Otter Habitat Capability for Project Area by WAA, 1956 and 1994

WAA	1956	1994	Percent Change
3001	41	25	-39.0
3312	14	11	-21.4
3313	41	14	-65.9
3314	25	17	-32.0
Total	121	67	-44.6

Note: Habitat capability is shown only for the portions of the WAAs within the Project Area. Source: Hawks 1995. Data derived from GIS data base and Suring et. al. 1988.

Marten - *Martes americana*

Historically, marten have inhabited the mainland of Southeast Alaska, and populations occur on Kuiu, Kupreanof, Mitkof, and Revillagigedo Islands. Through cooperative transplant work between the Alaska Department of Fish and Game and the USDA Forest Service, marten were introduced to Prince of Wales, Chichagof, and Baranof Islands during the years 1930-1950 to provide a furbearer for trappers (Burris and McKnight 1973; Johnson 1981). At the present time marten are found in all Project Area VCUs.

Marten prefer mature old-growth forests with a well developed overhead canopy. Snags and downed woody debris are important to marten for winter and summer dens and resting sites, and for cover for prey species. The distribution and abundance of marten is determined to a large extent by the availability of cover and the presence of prey species (Simon 1980). Throughout the year, especially in the winter, small mammals are an important food source for marten. During the summer their diet is supplemented by birds, insects, fruits, and berries.

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Winter habitat is the most limiting factor for marten in Southeast Alaska. Biologists assume that if adequate winter habitat is available, habitat requirements throughout the rest of the year will not be limiting. The model incorporates the following factors in the analysis: (1) timber volume in old-growth forests, (2) stand size classes, (3) beach fringe habitat, (4) riparian habitat, (5) elevation, (6) road density, and (7) patch size. Existing logging roads improve access for trappers, which could result in overharvest of marten.

Table 3-14 displays marten habitat capability for the Project Area.

Table 3-14

Marten Habitat Capability for Project Area by WAA, 1956 and 1994

WAA	No Patch Adjustment			Patch Adjustment			Road Density Adj.		
	1956	1994	% change	1956	1994	% change	1956	1994	% change
3001	103	83	-19.4	55	43	-21.8	103	66	-35.9
3312	40	37	-7.5	19	18	-5.3	40	37	-7.5
3313	95	67	-29.5	52	38	-26.9	95	42	-55.8
3314	79	71	-10.1	42	39	-7.1	79	71	-10.1
Total	317	258	-18.6	168	138	-17.9	317	216	-31.9

Note: Habitat capability is shown only for the portions of the WAAs within the Project Area. Source: Hawks 1995. Data derived from GIS data base and Suring et al. 1992.

Mountain Goat - *Oreamnos americanus*

Historically, mountain goats in Southeast Alaska were present only on the mainland. Although capable of swimming, they did not naturally disperse from the mainland to the islands. They have been successfully introduced on Baranof and Revillagigedo Islands. Presently mountain goat populations are generally stable or increasing throughout the Project Area, and interest in hunting or observing them continues to increase (Townsend 1986). Mountain goats are currently found within the following Project Area VCU's 287, 289, 291, 292, 299, 300, and 301 (Young 1992). This encompasses WAAs 3001, 3312, 3313, and 3314. Goat populations which are hunted are very sensitive to human presence, and poaching and overharvest may occur without carefully administered harvest regulations and enforcement. As human access increases into mountain goat habitat, the habitat capability model estimates a decline in habitat capability.

Mountain goats represent species using cliffs, alpine and subalpine, and old-growth forest habitats. A variety of vegetative food items are eaten by mountain goats throughout the year. These include foliage and seed heads of grasses, sedges, and brushes; foliage stems, and flowers of forbs; leaves and twigs of shrubs and trees; leaves of ferns; and the entire above ground portion of mosses and lichens (Wigal and Coggins 1982). Foraging sites and forage composition change throughout the year.

Mountain goats have not been identified as species requiring minimum patch sizes of a particular habitat type. Their habitats consist of steep, broken terrain with a variety of habitat patch sizes and patterns. Similarly, they do not have specific vegetative corridor requirements, as they travel and disperse through a variety of terrain and vegetative conditions.

The primary considerations in the evaluation of habitat for mountain goat in Southeast Alaska are availability of food and proximity to escape terrain (Suring et al. 1988). The quantity and quality of winter habitat is the most limiting factor for mountain goats in Southeast Alaska. The model incorporates the following factors in the analysis: distance from cliffs, aspect, timber volume class, and road effect.

Table 3-15 displays the habitat capability for mountain goat with and without road effects.

Table 3-15
Mountain Goat Habitat Capability for the Project Area by WAA, 1956 and 1994

WAA	Without Road Effects			With Road Effects		
	1956	1994	Percent Change	1956	1994	Percent Change
3001	55	50	-9.1	55	31	-43.6
3312	0	0	0	0	0	0
3313	12	7	-41.7	12	5	-58.3
3314	7	7	0	7	3	-57.1
Total	74	64	-13.5	74	39	-47.3

Note: Habitat capability is shown only for the portions of the WAAs within the Project Area. Source: Hawks 1995. Data derived from GIS data base and Suring et. al. 1988.

Brown Creeper - *Certhia americana*

The brown creeper is an uncommon, year-round resident throughout Southeast Alaska and is associated with large, old-growth trees. This bird species is most dependent on high-volume old growth where tree size is more important than species. Large diameter trees are preferred because a bird can feed longer on a large tree and capture more prey per visit (Airola and Barrett 1985). Brown creepers and other bark foraging birds also select larger diameter trees as foraging sites during cold, windy weather to reduce their exposure (Willson 1970, Grubb 1975, Weber 1986). The diet of brown creepers consists of larvae, pupae, and eggs of insects gleaned from the crevices of bark; spiders; other small invertebrates; and occasionally seeds (Pearson 1923, Reilly 1968).

The abundance of large coarse-barked trees and the length of the vertical foraging height appears to affect the bird's territory size (Apfelbaum and Hanley 1977); the area necessary to support these birds increases as the number of large, tall trees decreases. Brown creepers spend most of their time foraging on live parts of trees rather than dead

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trees (Morrison et al. 1987). The brown creeper shows a habitat/use relationship with the size of its preferred habitats. Optimum use occurs when patches of preferred habitat are greater than 15 acres, and use declines with decreasing patch size and becomes zero when patches are less than one acre (USDA Forest Service 1991). Specific vegetative corridor requirements have not been identified for the brown creeper nor have reductions in habitat capability due to disturbance caused by humans (USDA Forest Service 1991).

Winter habitat has been suggested as the limiting factor for cavity-nesting birds, including brown creeper (Raphael and White 1984; Haapanen 1965, p.190). The brown creeper model evaluates the capability of winter habitat based on timber volume and patch size.

Table 3-16 displays the habitat capability of the brown creeper for the Project Area.

Table 3-16
Brown Creeper Habitat Capability for the Project Area by WAA, 1956 and 1994

WAA	No Patch Adjustment			Patch Adjustment		
	1956	1994	% change	1956	1994	% change
3001	733	97	-86.8	84	61	-27.4
3312	83	16	-80.7	14	12	-14.3
3313	982	115	-88.3	106	86	-18.9
3314	322	76	-76.4	64	57	-10.9
Total	2120	304	-85.7	268	216	-19.4

Note: Habitat capability is shown only for the portions of the WAAs within the Project Area. Source: Hawks 1995. Data derived from GIS data base and Suring 1988 and Warm 1994.

Bald Eagle

Table 3-17
Number of Eagle
Nest Trees by VCU

VCU	# of Trees
287	32
288	2
289	17
290	7
291	5
292	22
299	5
300	4
301	4
302	21

Source: Barnes 1995.
Derived from GIS
database.

Bald eagles are found throughout Southeast Alaska and are primarily associated with coastal habitats and inland riparian habitats. Bald eagles may also concentrate at feeding grounds in the spring. They nest in coniferous forest habitats along the coastline and associated saltwater inlets (Suring et al. 1988). Of the 3,850 nests surveyed in Southeast Alaska, 92 percent were within 300 feet of the shoreline (Hodges and Robards 1892). Eagles prefer to nest in continuous stands of old-growth rather than in narrow leave strips of old-growth trees. Sitka spruce trees comprise the majority of the nest sites.

Bald eagles nest adjacent to the habitat that provides the best opportunities for searching for food, such as over open water and on tidal flats. Eagles primarily feed on fish, but are also known to feed on waterbirds, marine invertebrates, and drifting carrion. Perching sites near the nest and foraging areas are also important components of bald eagle habitat.

The U.S. Fish and Wildlife Service has identified 117 nest trees in the Northwest Baranof Project Area. Table 3-17 displays the number of identified eagle nest trees which occur in each VCU in the Project Area.

The bald eagle habitat capability model evaluates only the nesting habitat of bald eagles because limited information is available on the winter habitats and movements of bald eagles in Southeast Alaska (Suring et al. 1988). The model evaluates nesting habitat capability based on location, elevation, stream class, lake size, and vegetation. Bald Eagles have not been identified as needing particular patch sizes or vegetative corridors for movement or dispersal, they nest on almost every size island with suitable nesting habitat. The current density of inventoried nest sites is one nest per mile of shoreline. Table 3-18 displays the habitat capability of bald eagles for the Project Area.

Table 3-18
Bald Eagle Habitat Capability for the Project Area by WAA, 1956 and 1994

WAA	1956	1994	Percent Change
3001	131	70	-46.6
3312	45	34	-24.4
3313	129	36	-72.1
3314	77	48	-37.7
Total	382	188	-50.8

Note: Habitat capability is shown only for the portions of the WAAs within the Project Area. Source: Hawks 1995. Data derived from GIS data base and Suring et. al. 1988.

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Summary of Habitat Capability

Table 3-19 displays the estimated wildlife habitat capabilities within the Northwest Baranof Project Area.

Table 3-19

Wildlife Habitat Capability for MIS within the Northwest Baranof Project Area

Selected MIS	1956	1994	Percent Change
Sitka Black-tailed Deer	5,101	4,219	-17.3
Brown Bear	221	198	-10.4
River Otter	121	67	-44.6
Marten	317	258	-18.6
Mountain Goat	74	64	-13.5
Brown Creeper	2,120	304	-85.7
Bald Eagle	383	188	-50.8

Source: Hawks 1994. Data derived from GIS data base and Suring et al. 1988.

Marine Environment

Southeast Alaska has approximately 30,000 miles of shoreline of which 114 miles are in the Project Area. Along this shoreline a great diversity of habitat accounts for the complexity of Southeast Alaska's estuarine and tidal environments. This complex and dynamic ecosystem includes shrimp, flatfish, marine worms, starfish, sponges, anemones, sea cucumbers, urchins, shellfish, plankton, marine algae, and other organisms.

Marine Fish

Sablefish

Between 1986 and 1991 the National Marine Fisheries Auke Bay Laboratory in Juneau, Alaska conducted surveys in Southeast Alaska for concentrations of juvenile sablefish. Sizeable concentrations were found at St. John Baptist Bay. This is the only bay in Southeast Alaska in which large numbers of sablefish are found year after year.

Herring

In 1988, ADF&G recorded 104 nautical miles of herring spawn in the Sitka area, documenting the expansion of the spawning range, and providing a boost to the marine food base. The Sitka sac roe fishery, which takes place partially within the Project Area, has had a value from \$0.2 to \$6.77 million. From 1990 to 1994, the harvest ranged from 1,908 to 10,186 tons (ADF&G 1995). Direct and indirect income is generated by the community's related industry and services.

Marine Shellfish

The shallow marine waters and associated mud flats that are found in protected coves and bays provide vital habitat for some commercially important species, such as dungeness crab. Boes and White (1994) conducted dive surveys at previously used LTF sites and observed several shellfish species, including dungeness crab, red rock crab, abalone, Pacific pink scallops, coonstripe shrimp, horse clams, and blue mussels.

Endangered Species

The Endangered Species Act of 1973

The Endangered Species Act of 1973 was enacted "to provide a means whereby the ecosystems upon which endangered species and threatened species may be conserved, to provide a program for the conservation of such endangered species and threatened species...." Fish, wildlife, and plants in danger of extinction (as defined below) are protected by this Act.

Table 3-20

Threatened, Endangered, Species of Concern, and Sensitive Species Which May Occur in the Northwest Baranof Project Area

Common Name	Scientific Name	Federal Status	Alaska Region Status
Humpback whale	<i>Megaptera novaengliae</i>	E	--
Steller sea lion	<i>Eumetopias jubatus</i>	T	--
American peregrine falcon	<i>Falco peregrinus anatum</i>	E	--
Marbled murrelet	<i>Brachyramphus marmoratus</i>	C	--
Harlequin duck	<i>Histrionicus histrionicus</i>	C	--
Northern goshawk	<i>Accipiter gentilis</i>	C	S
Olive-sided flycatcher	<i>Contopus borealis</i>	C	--
Osprey	<i>Pandion haliaetus</i>	--	S
Trumpeter swan	<i>Cygnus buccinator</i>	--	S
Peale's peregrine falcon	<i>Falco peregrinus pealei</i>	--	S

- E= Endangered. Species is in danger of extinction throughout all or a significant portion of its range.
- T= Threatened. Species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.
- C= Species of Concern (former Category 2 Candidate species). Species for which there is some evidence of vulnerability, but for which there are not enough data to support a listing proposal at this time.
- S= Sensitive species. Species that is considered sensitive due to its behavior or critical life cycle component that may be affected or is considered sensitive through its association with a habitat type that is particularly sensitive.
- = No reference.

Wildlife

The humpback whale was Federally listed as endangered in 1970 and occurs in most of the marine waters of Southeast Alaska. There is no designated critical habitat nor is there any area being considered for designation as critical habitat in or near the Project Area (Zimmerman 1993).

The Stellar sea lion was designated as threatened on April 5, 1990. This species may occur near the Project Area. However, no critical habitats are designated in or near the Project Area at this time (Zimmerman 1993).

The American peregrine falcon is endangered and may occur in the Project Area as a migrant but is not likely to be affected by activities arising from this project (Holmberg 1994). No other threatened, endangered, or sensitive species are known to occur in the Project Area.

There are four Species of Concern that may occur in the Project Area: marbled murrelet, northern goshawk, Harlequin duck, and olive-sided flycatcher. Marbled murrelets are common in Southeast Alaska and occur in the Project Area. They are known to nest in thick moss on branches of old-growth coniferous trees. Harlequin ducks use rapidly flowing streams in forested areas during breeding season. The olive-sided flycatcher is uncommon in Southeast Alaska. This species nests in a variety of habitats including coniferous forest, open woodland, and muskegs.

Goshawk Surveys

Northern goshawks nest in old-growth forest stands in Southeast Alaska. In an effort to avoid timber harvest near goshawk nesting sites, Forest Service biologists conducted surveys of proposed timber harvest units and road locations (Appendix B). Surveys were conducted in 1993, 1994 and 1995. Appendix B displays the location and intensity of surveys by value comparison unit (VCU) and potential harvest unit. Goshawk surveys were initiated based on probability of nesting habitat, previous goshawk observations and areas not previously surveyed. The surveys were then prioritized based on probability of nesting habitat. Probability was determined based on attributes of known nest sites in Southeast Alaska. Attributes included areas below 1,000 feet elevation, timber volume class greater than 8,000 board feet/acre, slopes less than 75%, and with landforms of broken mountainslope or hillslope, hills, footslope or valley bottom.

In unit 4082 a goshawk responded in 1994 but not in 1993 or 1995. This indicated a foraging area but probably not a nesting area. In units 3111 and 3112 a goshawk responded in 1994 but no nest site(s) were located, indicating a foraging area and probably not a nesting area.

A nest site with 3 fledglings was located on the Duffield Peninsula in 1994. In 1995 it was revisited. Two nestlings and one adult were seen. This area was not considered for timber harvest as part of this project.

A probable nest site was located in unit 7123 near Noxon Creek in 1994. A plucking pole was located, but a nest has not been found. This area was not considered for timber harvest as part of this project.

3 Affected Environment

Murrelet Surveys

No nesting activity has been documented in this area (Mendenhall 1992) and no nesting surveys have been conducted in the Project Area. However, nearshore marine surveys and dawn watches were conducted in the Project Area by Forest Service biologists. Nearshore marine surveys were conducted in May of 1993 along the entire coast of the Project Area (approx. 130km). 284 marbled murrelets were counted (Appendix B).

Fish

There are no Federally listed threatened, endangered or sensitive fish species known to occur in the Project Area.

Plants

The only plant Federally listed or proposed by the U. S. Fish and Wildlife Service in Alaska is *Polystichum aleuticum*, which is endangered. It is only known from Adak Island and is not expected to occur in the Project Area.

There are two plant Species of Concern which are likely to occur in Southeast Alaska, including *Calamagrostis crassiglumis* and *Carex lenticularis* var. *dolia* (Lindell 1993). Information concerning these plant species is limited. The USFWS is not aware of any information that indicates whether or not these plant species occur in the Project Area (Lindell 1993). *Calamagrostis crassiglumis* is found to occur in coastal swamps and brackish meadows. This plant has not been documented to occur on the Tongass National Forest. *Carex lenticularis* var. *dolia* is associated with wet meadows, lake shores, and snowbeds, generally at higher elevations (above 600 meters in Southeast Alaska). This plant has been documented at four sites on or adjacent to the Tongass National Forest.

There are 22 plants designated as sensitive by the Regional Forester for Region 10. Of these plants, 15 are known or suspected to occur on the Sitka Ranger District and possibly in the Project Area. They are known or suspected to occur because of their range and/or general habitat requirements. These plants are:

- *Arnica lessingii* ssp. *norbergii*, Norberg arnica
- *Carex lenticularis* var. *dolia*, Goose-grass sedge
- *Dodecatheon pulchellum* ssp. *alaskanum*, Pretty shooting star
- *Draba kamtschatica*, Kamchatka rockcress
- *Glyceria leptostachya*, Davy mannagrass
- *Hymenophyllum wrightii*, Wright filmy fern
- *Isoetes truncata*, Truncate quillwort
- *Ligusticum calderi*, Calder lovage
- *Platanthera chorisiana*, Choris bog orchard
- *Platanthera gracilis*, Bog orchid
- *Poa laxiflora*, Loose-flowered bluegrass
- *Puccinellia kamtschatica*, Kamchatka alkali grass
- *Romanzoffia unalaschcensis*, Unalaska mist-maid
- *Senecio moresbiensis*, Queen Charlotte butterweed
- *Stellaria ruscifolia* ssp. *aleutica*, Circumpolar starwort

In addition to the sensitive plant species listed above, two plant species may be added to the R-10 sensitive species list in the future. These plants are:

- *Salix reticulata* ssp. *glabelllicarpa*, Netted willow
- *Botrychium ascendens*, Ascending moon wort

The Forest Service conducted surveys for these plants in the Project Area. Most of the proposed new road corridors and harvest units with high probability of sensitive plant occurrence in the Project Area were surveyed. High probability sites generally include alpine/sub-alpine habitat, avalanche slopes, swales, meadows (upper beach, dry or wet meadows), streamsides, lake margins, and rock outcrops. No Sensitive plants were found.

On-Site Human Environment

Silviculture and Timber Management

Silviculture is defined as the art and science of manipulating vegetation to meet desired goals. Silviculture involves the practice of controlling the establishment, composition, and growth of forests. We use silvicultural techniques in the planning process to identify current forest conditions, to develop management goals, and to determine appropriate treatment for harvest units in the Project Area so that we can meet those goals.

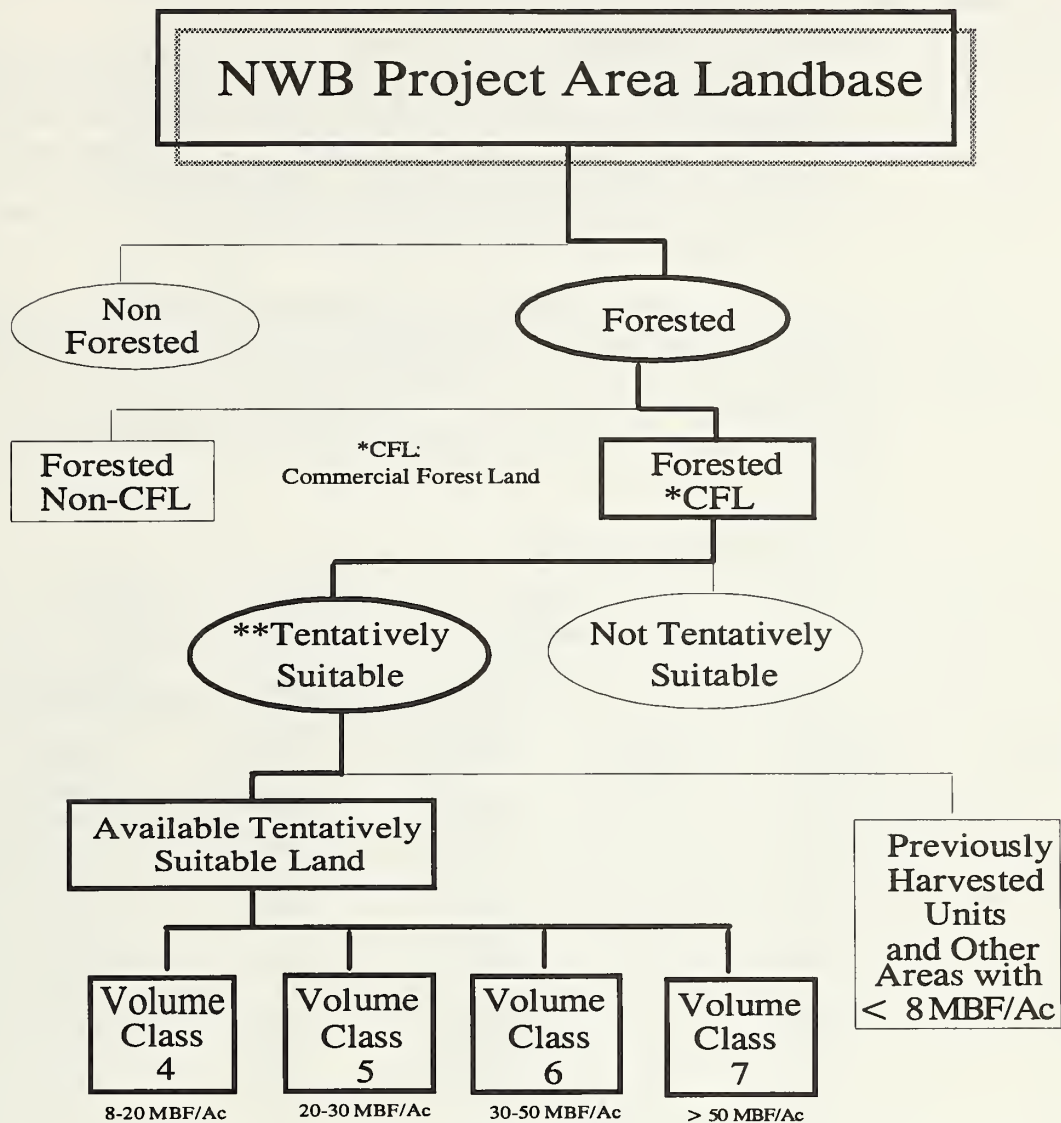
Within the Project Area there are relatively healthy and vigorous second-growth stands, as well as old-growth stands with varying levels of forest health. Forest health within the Project Area is impacted at varying levels by rots and decays, mistletoe, cedar decline, and insects. In general, there is no distinct or obvious pattern of the "health" of the forest within the Project Area. One exception might be the incidence of cedar decline, which appears to be associated with soil water patterns across the landscape.

Forest stand structure is closely tied to position on the landscape and disturbance history of the stand. In general, most of the unharvested old-growth forests within the Project Area are uneven aged. These forests may be characterized as multi-layered, complex forests. Successional patterns and forest development tend to be intimately linked to frequent, small-scale disturbances such as wind. Within these old-growth forests there are individual stands which may be characterized as even-aged forest. In even-aged stands there may be a wide range of diameter classes present, but typically most trees are very uniform in height and age.

Western hemlock and Sitka spruce dominate timber stands throughout much of the Project Area. Yellow cedar is an important associated species found in conjunction with hemlock and spruce. Other tree species within the Project Area include red alder, mountain hemlock, and shore pine.

The land available for timber management within the Project Area was determined using a step-by-step process. Figure 3-4 displays this process.

Figure 3-4



*CFL is capable of producing ≥ 20 cubic feet/acre/year
or currently has ≥ 8 MBF/Acre

**Tentatively Suitable Land is:

- at least 10 percent occupied by trees
- capable of harvest without irreversible resource damage
- able to be harvested with reasonable assurance of restocking
- not withdrawn from timber production by Act of Congress, Sec. of Agriculture, or the Chief of the Forest Service (Forest Service 1991)

3 Affected Environment

Commercial Forest Land (CFL)

Depending on its vegetative cover, land in the Project Area has been categorized as forest land or nonforest land. Forest land is further categorized as commercial forest land (CFL) or noncommercial forest land (non-CFL).

Forest land is considered commercial if it produces or is capable of producing continuous crops of timber, and has not been withdrawn from the timber base by statute or administrative action. In order to be classed as CFL, the land must produce at least 20 cubic feet of wood fiber per acre per year, or contain at least 8 thousand board feet (mbf) of net timber volume per acre (Forest Service 1978). Old growth and second growth (including stands that have been naturally disturbed or logged) may qualify as CFL. About 41 percent of the land in the Project Area is CFL.

Non-CFL is forested land that is incapable of producing commercial quantities of timber or has been withdrawn from the timber base. Approximately 33 percent of the Project Area is forested non-CFL. The remaining 26 percent of the Project Area is classified as nonforest and includes estuarine tidal flats, shrublands, riparian areas, muskegs, meadows, alpine areas, rock outcrops, and freshwater lakes (Table 3 -21)

Table 3-21
Landbase by VCU (in acres)

VCU	Non-Forested	Forested Non-CFL	Forested CFL	Total
287	10,519	16,550	15,322	42,391
288	1,193	2,970	1,911	6,074
289	1,362	3,888	3,310	8,560
290	737	2,776	1,749	5,262
291	584	3,768	7,658	12,010
292	5,463	5,934	12,675	24,072
299	15,893	3,112	4,664	23,669
300	2,275	4,195	6,287	12,757
301	1,509	874	3,249	5,632
302	803	6,259	7,155	14,217
Total	40,338	50,325	63,981	154,645

Source: Mork 1994.

Volume Class

CFL in the Tongass National Forest has been stratified into volume classes for analysis purposes (Forest Service 1991). Each Volume Class aggregates existing timber stands with similar resource conditions and is represented by a range of merchantable timber volumes per acre. There is also CFL within the Project Area that is not included in this classification. This CFL includes areas of past harvest that have not yet produced 8 thousand board feet (mbf) per acre. Table 3-22 displays the volume ranges of merchantable timber for each of the volume classes. Table 3-23 shows the acres of CFL in Volume Classes 4 - 7 in the Project Area.

Table 3-22
Timber Volume Classes

Volume Class	Range of Volume (mbf/acre)
4	8-20
5	20-30
6	30-50
7	> 50

Source: Mork 1994.

Table 3-23
Commercial Forest Land by Volume Class (by VCU, acres)

VCU	Total Forested CFL	Volume Class 4	Volume Class 5	Volume Class 6	Volume Class 7	Other
287	15,323	9,253	4,334	79	0	1,657
288	1,911	1,601	310	0	0	0
289	3,309	2,486	546	6	0	271
290	1,748	1,490	109	0	0	149
291	7,658	3,209	2,474	40	0	1,935
292	12,674	5,171	3,300	166	0	4,037
299	4,665	2,073	773	43	0	1,776
300	6,287	3,715	1,459	0	0	1,113
301	3,249	1,516	946	0	0	787
302	7,155	3,936	2,444	68	0	707
Total	63,979	34,450	16,695	402	0	12,432

3 Affected Environment

Tentatively Suitable for Harvest

CFL is further classified as tentatively suitable or not tentatively suitable for timber harvest. In order to be considered tentatively suitable, forested land must:

- be at least 10 percent occupied by trees;
- be capable of harvest with available technology to ensure timber production without irreversible resource damage to soil productivity or watershed conditions;
- have a reasonable assurance that the area can be restocked after final harvest; and
- not be withdrawn from timber production by an Act of Congress, the Secretary of Agriculture, or the Chief of the Forest Service (Forest Service 1991).

For the purposes of this analysis, available tentatively suitable forested land must also have sufficient timber volume to be currently available for harvest (included in Volume Classes 4, 5, 6, or 7). Therefore, the total acreage of available tentatively suitable forest land displayed in Table 3-24 is less than the total CFL displayed in Table 3-23.

Table 3-24
Available Tentatively Suitable Forest Land (in acres)

VCU	Total Available Tentatively Suitable	Volume Class			
		4	5	6	7
287	10,845	7,272	3,498	75	0
288	1,529	1,278	251	0	0
289	2,116	1,810	306	6	0
290	1,091	1,005	86	0	0
291	4,951	2,725	2,195	31	0
292	6,801	4,045	2,607	149	0
299	1,869	1,330	519	20	0
300	4,576	3,237	1,339	0	0
301	1,963	1,217	746	0	0
302	5,410	3,448	1,897	65	0
Total	41,151	27,366	13,444	347	0

Source: Mork 1994.

Historic Timber Use

People have been using trees in Southeast Alaska ever since the first humans made their prehistoric appearance. The Tlingit and Haida Indians used trees to construct canoes, build log-frame houses, carve totem poles, and make household, personal, and ceremonial articles. Firewood was always in demand. The Indians cleared trees from some areas for villages or camps.

In the 1800's, the Russian colonists began clearcutting at Sitka to build a foundry, a fort, dwellings, and boats. Growth of the Sitka colony increased the demand for lumber for new construction, firewood and charcoal. Shipbuilding was an important occupation, with yellow cedar favored for hull construction because of its durability. Selective logging for cedar took place along tidewater as far distant as Peril Strait. In 1833 the Russians built a sawmill at Redoubt Bay south of Sitka. Sometime before 1853, a second sawmill was built at Sawmill Creek about 5 miles south of Sitka, and a third sawmill at Sitka. The Russian sawmills produced about 3 mbf of lumber daily. Lumber was sawn for local use as well as for export. By 1889, 11 sawmills were operating in Southeast Alaska, cutting timber for local use. Between 1910 and 1920 approximately 420 mmbf of sawtimber and piling were sold through 4,000 timber sales from National Forest lands (Harris and Farr 1974).

Past timber harvest within the Project Area primarily occurred along several of the major streams, at the head of bays, and along salt water. The methods used include steam donkey, tractor, and highlead logging. Portions of Rodman Creek, Fish Bay Creek, and Nakwasina Creek were selectively logged between 1892 and 1912. Large Sitka spruce were harvested at this time. There is evidence that two large areas were also logged in the early 1950s. These included 639 acres at the head of Fish Bay and 219 acres along the stream just east of Goose Cove.

In 1956, the Alaska Lumber and Pulp Company was awarded a 50-year timber sale contract. The company opened a pulp mill at Silver Bay near Sitka in 1959. In addition to the above mentioned drainages, Adams Creek, Duffield Creek, and Noxon Creek drainages, and several smaller cuts along saltwater were entered for logging between 1960 and 1975. Approximately 8,335 acres of old-growth forest were harvested in the Project Area under terms of the APC Long-term Timber Sale Contract (Table 3-25). The gentler slopes along the creeks were usually tractor logged. The steeper ground was usually yarded with a highlead configuration and areas along salt water were logged using A-frames. These areas were mostly clearcut harvested, although some areas show individual merchantable trees that were left standing. Commercially harvested species included western and mountain hemlock, Sitka spruce, and yellow cedar.

3 Affected Environment

Table 3-25
Recorded Timber Harvest (in acres)

VCU	Before 1961	1961-1970	1971-1995	Total
287	842	827	0	1,669
288	0	0	0	0
289	279	0	0	279
290	149	0	0	149
291	16	1,919	0	1,935
292	992	2,893	0	3,885
299	1,574	138	0	1,712
300	6	1,085	0	1,091
301	3	784	0	787
302	0	689	0	689
Total	3,861	8,335	0	12,196

Source: Mork 1994

Reforestation

Reforestation is the process of establishing new trees on harvested units. A silviculturist must certify that harvest units meet or surpass stocking guidelines within a five-year period following harvest (USDA Forest Service 1991c). Reforestation can be accomplished by natural seeding from surrounding timber stands or by planting. Natural regeneration usually produces satisfactory results in Southeast Alaska; however, there are situations where hand planting may be necessary or desirable. Examples include when a natural source of seed for a desired species is inadequate to maintain a timber stand's current species composition, or when it is desirable to reduce the time needed for natural regeneration. All of the previously harvested areas have been certified as adequately stocked.

Precommercial Thinning

Natural regeneration often results in overstocked stands which necessitate precommercial thinning in order to facilitate growth. Thinning is the systematic regulation of growing stock in a young forest. Precommercial thinning involves the selective removal of trees from second-growth stands that are typically 15 to 25 years old. Thinning reduces competition among trees in the stand, which stimulates growth of the remaining trees. Precommercial thinning may also control species composition, improve windfirmness, or increase forage. Approximately 3,611 acres have been thinned in the Project Area (Table 3-26).

Table 3-26
Acres of Past Precommercial Thinning

VCU	Acres
287	49
288	0
289	0
290	0
291	335
292	1,631
299	632
300	563
301	401
302	0
Total	3,611

Source: Mork 1994.

Hunting, Fishing, and Subsistence

Hunting

Mountain goat, brown bear, and Sitka black-tailed deer are species taken both by subsistence and sport hunters. To get an understanding of the magnitude of hunting, it is important to look at not just the number of animals harvested but also look at the number of hunters, number of days hunted, percent of successful hunters and average hunter days.

The Project Area lies within four WAAs delineated by the State of Alaska to analyze harvest, population, and habitat data for wildlife planning and management (Figure 3-3). All four WAAs lie within Game Management Unit (GMU) 4, a much larger area which includes all of Baranof, Chichagof, Kruzof, and Admiralty Islands. The State uses GMUs for regulatory purposes.

Sitka Black-tailed Deer

Winter is assumed to be the most limiting season for the Sitka black-tailed deer (Hanley and McKendrick 1985, cited by Suring et al. 1991). During severe winters, the mean temperature drops below long-term averages and snow cover is deep and lasts for a longer period of time. At these times, deer mortality would be expected to be higher than normal. Deer response to high winter mortalities can vary in Southeast Alaska. Sitka black-tailed deer have the capability to respond quickly to rebuild populations under ideal circumstances, but there are areas where high winter mortality has resulted in low populations and no seasons for over 10 years (Thornton 1992). Within GMU-4, season length and bag limit restrictions have lasted from 1 to 3 years in the past. During these severe winters, deer survive best in old-growth forest. The larger blocks of unfragmented old growth provide better habitat for deer than the more heavily managed landscapes. Under moderate winter conditions, with good forage and habitat conditions, the populations recover fairly rapidly. Population responses to favorable weather conditions have resulted in season and bag limit increases in the past.

Based on the cyclic nature of Southeast Alaska weather, it is likely that there will be a severe winter die-off of deer once every eleven years. Deer populations in the Project Area are likely to suffer increased mortality if and when there is a hard winter at low elevations. Winter deer mortality may be high when deep snow persists for over 30 days. Excessively high deer densities and overbrowsed range have also caused localized winter die-offs within the Project Area (Kirchoff 1991). Winters where snow depths of over fifteen inches that persist longer than 30 days have occurred in 1950, 1956, 1969, 1972, 1982, 1989, and 1991 (Copenhagen 1989, Schenck 1995). Based on the above, it appears that conditions which would lead to a reduction in deer abundance will occur between 10 and 17 percent of the time between now and 2008 (Johnson 1986, Juday 1982, Merriam 1970).

During the 1993-1994 deer season, residents of Sitka (1,439 hunters) hunted 8,307 hunter days and 81 percent were successful. On average Sitkans hunted 5.8 days and harvested 2.2 deer per hunter. Within the Project Area WAAs, 895 hunters reported hunting 2,168 days (Table 3-27). Over 60 percent of the hunters reported being successful (harvesting at least one deer). Deer season extends from August 1 to

December 31 on State lands, and to January 31 on Federal lands. Hunters are allowed to harvest 4 to 6 deer, depending on where they hunt.

Table 3-27

Hunting Effort and Success for Sitka Black-tailed Deer in Project Area WAAs in Regulatory Years 1993-94

WAA	No. of Hunters	No. of Days Hunted	Average Hunter Days	Average Trips per Hunter	No. of Successful Hunters	Percent of Successful Hunters	Average Deer per Hunter
3001	563	1,365	2.4	1.8	338	60.1	0.9
3312	83	124	1.5	1.0	48	58.5	0.8
3313	93	310	3.3	1.3	72	76.9	1.3
3314	156	369	2.4	1.3	94	60.4	0.9
Total	895	2,168	2.4		552	61.6	

Source: Hartmann 1995.

Mountain Goat

The mountain goat season extends from August 1 to December 31. One goat may be taken. Goat hunters are required to have a State registration permit. In GMU-4 six permit holders were nonresidents, and all six permit holders hunted. In Project Area WAAs, 118 hunters reported hunting 226 days for mountain goats (Table 3-28). Thirty-one percent of the hunters were successful. The successful hunters averaged 2.0 hunter days. Popular goat hunting areas include Katlian, Nakwasina, and Rodman Bay drainages.

Table 3-28

Hunting Effort and Success for Mountain Goat in Project Area WAAs for the 1993-94 Regulatory Year

WAA	No. of Successful Hunters	No. of Days Hunted by Successful Hunters	No. of Unsuccessful Hunters	No. of Days Hunted by Unsuccessful Hunters
3001	10	9	12	25
3312	0	0	0	0
3313	2	2	4	4
3314	3	7	3	13
Total	15	18	19	42

Source: Hartmann 1995.

3 Affected Environment

Brown Bear

In the Project Area, there are two brown bear seasons per year, a spring hunt (March 15 to May 20) and a fall hunt (September 15 through December 3). Brown bear hunting is also a permit-only hunt with restrictive bag limits. One bear may be harvested every four regulatory years. Subsistence hunters must also follow these rules and must salvage the edible meat of a brown bear.

For the two bear seasons in regulatory year 1993-94, 670 brown bear permits were issued from ADF&G for GMU-4. Two hundred eighty-seven permit holders hunted a total of 1,562 days or on average 5.4 days per hunter. In GMU-4, 156 permit holders were nonresidents and 152 had the services of a guide. In Project Area WAAs 38 hunters reported hunting 98 days for brown bear (Table 3-29). Sixteen percent of the hunters were successful. The successful hunters averaged 6.8 hunter days. The unsuccessful hunters averaged 1.8 hunter days.

Table 3-29
Hunting Effort and Success for Brown Bear in Project Area WAAs for the 1993-94 Regulatory Year

WAA	No. of Successful Hunters	No. of Days Hunted by Successful Hunters	No. of Unsuccessful Hunters	No. of Days Hunted by Unsuccessful Hunters
3001	2	6	9	21
3312	0	0	0	0
3313	2	22	8	16
3314	0	0	6	11
Total	4	28	23	48

Source: Hartmann 1995.

Fishing

Recreational fishing opportunities are found both in and adjacent to the Project Area. Although the majority of the sport fishing occurs in the saltwater surrounding the Project Area, fresh water fishing also occurs. A major value of the Project Area is the capacity of its streams to produce anadromous fish such as pink, chum, and coho salmon, and Dolly Varden char. None of the streams within the Project Area produce king salmon. Two of the most important streams in the Project Area are Nakwasina River and Fish Creek, which have sizeable coho salmon and steelhead trout populations. Many of the larger streams and a cluster of lakes between St. John Baptist Bay and Fish Bay contain cutthroat trout and Dolly Varden char. Two lakes located near Nakwasina Passage are easily reached from Sitka. One lake has a resident population of cutthroat trout and a second has Dolly Varden char. A lake near Range Creek has unconfirmed reports of cutthroat trout. See Appendix I for a sport fishing map.

According to the most recent Southeast Alaska Sport Fishing Economic Study (Jones & Stokes Associates, Inc. 1991), sport fishers in the Sitka Harvest Area spent an estimated \$10.7 million in 1988 fishing for king salmon, coho salmon, and halibut. In Southeast Alaska, king salmon generated the most spending by both resident and nonresident anglers of all species sought. Residents spent more to catch coho salmon than they did to catch halibut, while nonresidents spent more to catch halibut than coho salmon. Combining residents and nonresidents, more money was spent to catch halibut than coho salmon.

Sport fishers who fished in Southeast Alaska purchased goods and services from a variety of businesses. Spending at these sources directly supported the equivalent of 657 full-time jobs in 1988. The multiplier effect of these purchases resulted in the equivalent of 950 full time jobs with a value of \$22.5 million in earnings. Associated revenues generated from sportfishing include local sales tax, lodging tax, State fishing licenses, and corporate income taxes. Beyond the numbers, fishing in the bays and streams of the Project Area is important to the quality of life of many Sitkans.

Subsistence

Subsistence use of natural resources on the Tongass National Forest is a way of life through which many rural residents of Southeast Alaska maintain their physical, economic, cultural, and social existence. Title VIII of the Alaska National Interest Lands Conservation Act (ANILCA) defines subsistence as: "...the customary and traditional uses by rural Alaska residents of wild, renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of non-edible by-products of fish and wildlife resources taken for personal or family consumption; for barter, or sharing for personal or family consumption; and for customary trade." (ANILCA, 16 USC 3113).

The ANILCA provides for "the continuation of the opportunity for subsistence uses by rural residents of Alaska, including both Natives and non-Natives, on public lands." It also states that "customary and traditional" subsistence uses of the renewable resources shall be the priority consumptive uses of all such resources on the public lands of Alaska. In July 1990 the Federal Government took over management of subsistence use of wildlife resources on Federal lands regulated through the Federal Subsistence Board.

3 Affected Environment

Subsistence activities include hunting, fishing, and trapping, as well as collecting berries, edible plants, and fuel wood. In addition to the harvest and consumption of resources, subsistence is also an important component of social life. Sharing with family and friends is embedded in local culture. Forty-one percent of all deer-harvesting households in Southeast Alaska give deer meat to friends and relatives (Kruse and Muth 1990). In addition, resources may be traded among communities unable to obtain specific subsistence resources locally. Thus, distribution of wild, renewable resources represents an essential part of the tradition and culture of Southeast Alaska (Langdon and Worl 1981).

Subsistence Use Areas

People gather subsistence resources throughout the Project Area. Estuaries in Katlian (just south of the Project Area), Nakwasina, and Fish Bay provide important habitat for waterfowl, and hunting opportunities for ducks, geese, and brown bears. The tidal flats in these bays provide important shellfish habitat. The bays also have salmon runs which contribute to the abundance of other wildlife that use the estuaries.

Popular deer hunting areas include Nakwasina River, and the watersheds along Nakwasina Bay and Nakwasina Passage. Other popular areas are St. John Baptist Bay, Neva Strait, Fish Bay, Peril Strait, Sergius Narrows, and Deadman Reach. Marten are commercially trapped in the Rodman Bay, Fish Bay, St. John Baptist Bay, and Nakwasina drainages.

Historical Use

Goldschmidt and Haas (1946) identified land-use patterns associated with Native communities that existed in the mid-twentieth century in Southeast Alaska. It appears that hunting and fishing use by Natives in Southeast Alaska is still tied to some extent to traditional land use. Despite technological advances (such as large, modern boats) that would allow residents of Native communities to travel greater distances to hunt or fish, their use appears to be concentrated in areas of traditional clan boundaries. The distribution of harvest locations for non-Native communities, on the other hand, often ranges over greater areas.

Historical clan hunting boundaries of the Angoon and Sitka Tlingit overlap with the Project Area (see Appendix G). Only the communities of Angoon and Sitka have traditional use areas within the Project Area. Portions of the Project Area fall within the traditional use areas of the Kaukwedi clan from Angoon and the Kiksadi, Kagwantan, Luqanaxadi, Tcukanedi, Luqanadi, and Dak'dentan clans from Sitka.

Current Use

Subsistence is a complex issue covering many aspects of lifestyles which are embodied in the people who reside in Alaska. We used ADF&G harvest data to determine which communities should be included in the subsistence analysis. Sitka residents are the most dependent on the Project Area for deer harvest. Sitkans derived 38 percent of their total harvest from the Project Area during the years 1987 through 1992. The communities listed in Table 3-30 reported harvesting deer from Project Area WAAs during 1987-1992. Residents of Cube Cove Camp, Hollis, Hydaburg, Long Island

Camp, Meyers Chuck, and Yakutat also reported hunting in Project Area WAAs, but did not report any harvest. Sitka is the closest community to the Project Area, and Angoon is the next closest community. Residents of Sitka can reach the Project Area by skiff. Fifteen other communities each obtain less than one percent of their total deer subsistence harvest in the Project Area. The pattern is similar for other subsistence resource use in the Project Area, with Sitka being the dominant user community.

Table 3-30

Communities That Reported Deer Harvest from Project Area WAAs from 1987-1992

Community	Mean No. of Deer Harvested	Percent of Community's Deer Harvest	Percent of Total Harvest from Project Area WAAs	Mean No. of Deer Harvested from WAA			
				3001	3312	3313	3314
Angoon	7	3	<1	2		5	
Haines	12	4	1	1	9		
Hidden Falls	<1	10	0				
Hoonah	1	<1	0			1	
Juneau	27	<1	2	6	2	4	7
Kake	1	1	<1	1			1
Ketchikan	16	1	1			6	2
Other AK	26	12	2	10		5	2
Outside AK	8	13	1	3		1	
Pelican	1	1	0				
Petersburg	16	1	1		1	15	
Port Alexander	2	3	<1		2		
Port Protection	0	0	0				
Sitka	1,270	38	90	502	141	139	129
Skagway	1	5	0				
Tenakee Springs	0	0	0				
Thoms Place	2	100	<1			1	
Thorne Bay	3	1	<1				
Wrangell	16	4	1	3	1	4	3

Source: Hartmann 1995.

Subsistence/Personal Use Fishing

In recent years, ADF&G's Commercial Fisheries Division in Sitka has issued up to 669 subsistence/personal use fishing permits. The vast majority of the permittees seek sockeye salmon from lakes that occur outside the Project Area, primarily Redoubt Lake and Necker Bay. Some personal use permit holders take pink and chum salmon from Nakwasina. In 1988, for instance, there were 265 total subsistence/personal use permit holders for the Sitka area. In Nakwasina, six permit holders harvested 2 sockeye salmon, 50 pink salmon, and 52 chum salmon. There appears to be an adequate supply of pink and chum salmon in Nakwasina to meet the current demand.

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Sitka's Subsistence Use

Sitka residents harvest deer, bears, seals, waterfowl and other birds, furbearers (marten, mink, and river otter), salmon, shellfish, marine fish, and berries. The annual harvest of subsistence resources was 139 pounds per capita in 1987. Subsistence resources provided about 24 percent of household food. Deer and salmon were the largest resource items harvested, comprising 27 percent and 28 percent, respectively, of the total per capita harvest. Other finfish (25 percent) were also an important subsistence item harvested.

Sitka residents harvested more than 90 percent of the deer taken from the Project Area between 1987 and 1992. Based on data from 1987 to 1992, Sitka obtains approximately 38 percent of its deer harvest in the area. The mean annual harvest from the Project Area is 1,096 deer. Of these, an average of 936 were taken by Sitka residents.

Angoon's Subsistence Use

Angoon residents harvest deer, bears, seals, waterfowl and other birds, furbearers (marten, mink, and river otter), salmon, shellfish, marine fish, and berries. The annual harvest of subsistence resources was 242 pounds per capita in 1987, with subsistence resources providing about 46 percent of the household food. Angoon residents harvested less than 1 percent of the deer taken from the Project Area between 1987 and 1992, which comprises 3 percent of the reported deer harvested by Angoon residents.

Recreation and Scenic Quality

Recreation

The Northwest Baranof Project Area is over 155,000 acres. Although the acreage is large, much of the Project Area is difficult to access due to steep terrain, wetlands, and dense vegetation. Most of the recreational activities which take place in the Project Area occur near accessible shorelines, rivers, streams, and lakes. Roads exist in isolated locations where timber harvest has taken place in the past. However, these roads are not connected to each other or to any community. The Forest Service does not maintain these isolated roads for vehicle travel and in many places alder growth on the road surface has restricted travel, leaving little more than wildlife trails.

Recreation Use

Access to the Project Area is primarily by boat from salt water. Floatplanes are available on a charter basis and can land on several lakes within the Project Area. The Alaska Marine Highway provides ferry service to the community of Sitka. All ferries traveling to Sitka pass through Peril and Neva Straits adjacent to the Project Area. In 1994, State ferries traveled to Sitka 287 times, resulting in 574 passes through the waters adjacent to the Project Area. There was a total of 74,218 passengers on board for those 574 passes.

The Project Area extends from one mile north to approximately 30 air miles north of the northernmost end of the Sitka road system. Nautical distance from the Old Sitka boat launch (near the northern end of the Sitka road system) to the farthest water access point in the Project Area (Rodman Bay) is approximately 45 miles.

Popular recreation activities in the general area include picnicking, camping, hiking, photography, beach activities, and boating. There are many fine anchorages for small boats scattered throughout the Project Area. Recreationists also enjoy viewing wildlife and hunting. The majority of the recreation which takes place in the Project Area is marine based and occurs on the lands immediately adjacent to the salt water. Fishing takes place in saltwater, streams, and lakes. Some outfitter and guide permits allow guides to charter throughout the Tongass National Forest. Charters include bear hunting, fishing, and wildlife viewing trips.

Several commercial enterprises specializing in wildlife viewing and fishing trips use the saltwater around the Project Area and are not required to have Forest Service Outfitter and Guide Permits. These operators do not need permits because they do not go to shore. One Sitka-based charter operator took over 22,000 visitors to the Salisbury Sound, Neva Strait, Nakwasina Passage, and Nakwasina Sound portions of the Project Area in 1993.

Recreation facilities within the Project Area include a Forest Service recreation cabin on Piper Island (in Schulze Cove), and Forest Service emergency shelters at Channel Rocks and Otsoia Island. A corrugated steel cabin on southern Lauf Island (built by a State of Alaska crew), and three old Forest Service tent platforms at the old log transfer facility (LTF) near the head of Fish Bay also exist. Although the steel cabin and tent platforms are not maintained as Forest Service recreation facilities, they are occasionally used by

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people recreating in the area and are maintained periodically by the users. Several old road systems occur along portions of some of the Project Area creeks. Each road system originates at an LTF site on saltwater. Several recreation facilities lie just outside of the Project Area boundaries. These include Forest Service recreation cabins at Allan Point and Appleton Cove, and an emergency shelter on the west side of Neva Strait. No other shelters, cabins, or recreation facilities are known to exist in the Project Area.

We can use existing recreation activities to project demand for recreation opportunities in the future. Demand for a variety of recreation settings is growing. The greatest increase in demand is for natural-appearing areas accessible by small boats which are located away from primary marine travelways. Throughout the Tongass National Forest it appears that demand for this particular setting will exceed supply by the end of the decade. We project that demand for all other recreation settings will be met. (Forest Service 1991)

Recreation Setting

A major component of recreation and tourism is the setting in which activities take place. Setting influences the opportunities, activities, and experiences which can occur and the overall satisfaction of a person's visit. Much of the tourism industry in Southeast Alaska relies heavily on the visual setting.

Although the Forest Service inventories a wide range of recreation settings in its Recreation Opportunity Spectrum (ROS) inventory system, for practical purposes we can divide the Project Area into two basic settings: natural and modified. The areas we are calling "natural" are those where human modifications are not the dominant part of the landscape. Most of the shorelines and inland areas which are not located near old harvest units or roads fall into this category. The areas we are calling "modified" have human modifications to the environment as a dominant part of the landscape. The area around and including all roads and most harvest units fall into this setting.

Presently, 83% of the Project Area is in a natural setting and 17% is in a modified setting. Because most of the recreation which takes place in the Project Area is marine based and occurs immediately adjacent to the salt water, the shoreline setting is important. Presently, 71% of the Project Area shorelines are in a natural setting and 29% are in a modified setting.

Table 3-31
Natural and Modified Recreation Setting by VCU

VCU	Natural Setting (acres)	Modified Setting (acres)
287	38,708	3,684
288	7,126	0
289	8,560	0
290	5,262	0
291	8,290	3,720
292	15,923	8,383
299	20,400	3,270
300	10,049	2,708
301	3,743	1,960
302	11,981	2,235
Total	130,043 83% of total	25,960 17% of total

Source: Flynn 1995. This information was derived from the ROS inventory in the Chatham Area GIS database.

Table 3-32
Shoreline Setting by VCU

VCU	Natural Setting (miles)	Modified Setting (miles)
287	23.2	0.7
288	10.7	0.0
289	12.2	0.0
290	5.0	0.0
291	3.2	1.2
292	0.0	14.9
299	0.0	6.7
300	6.7	2.9
301	0.0	4.2
302	19.9	2.5
Total	80.9 71% of total	33.1 29% of total

Source: Flynn 1995. This information was derived from the ROS inventory in the Chatham Area GIS database.

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Recreation Places

Recreation use in the Project Area is not evenly dispersed across the landscape. This is partly due to difficult terrain, heavy vegetation, and limited roads and trails. It is also due to the nature of recreation itself. Even in areas where access is not a problem, recreation use is heavier in some places and less in others. Recreation use tends to cluster around features which attract people. On the Tongass National Forest recreation planners have created the concept of "Recreation Places" to identify those areas where recreation tends to occur more frequently. A Recreation Place is an identified geographic area having one or more physical characteristics attractive to people engaging in recreational activities. For an area to be inventoried as a Recreation Place its attractors must be significant enough to cause more than occasional use. Some of the features which attract people are beaches, streams, roads and trails, lakes, cabins, and anchorages. Each Recreation Place has one or more activities associated with it such as viewing scenery or wildlife, boating, hiking, fishing, dispersed camping, and hunting. Within the Northwest Baranof Project Area there are 24 inventoried Recreation Places totaling 24,621 acres (displayed in Figure 3-5 and listed in Table 3-33).

Table 3-33
Recreation Places and Their Features

Map Number	Recreation Place	Features	Setting**	Acres
1.	Neva Strait*	Anchorage, High boat use*	N	843*
2.	Nakwasina Passage*	Big game and Waterfowl hunting*	N	501*
3.	St. John Baptist Bay Road System	ORV use, Hiking, Lake/stream fishing	M	4,720
4.	Nak.Passage/St. Johns Road	Shoreline, Big game hunting	N	346
5.	St. John Roads Uplands	Big game hunting	N	503
6.	Channel Rocks	Emergency shelter, Anchorage	N	200
7.	Fish Bay Road System	Dispersed camping, Hot Springs, ORV use	M	2,828
8.	Head of Fish Bay	Anchorage, Trail, Hiking, Estuary	N	211
9.	Haley Anchorage/Haley Point	Anchorage, Big game hunting	N	662
10.	Haley Point Uplands	Big game hunting	N	3,841
11.	Bear/Baby Bear Bay	Anchorage, Camping, Nature study	N	798
12.	Range Creek Cove/Yellow Point	Camping, Hiking, Boat access	N	270
13.	Rodman Bay	Anchorage, Cabin, Shoreline	M	2,215
14.	Sinitzin Cove*	Beach, picnicking*	N	2*
15.	Nismeri Cove	Hunting, Shelter, Cove	N	396
16.	Pogibshi/Goose Cove	Shoreline, Grass flats	N	375
17.	Launch Cove/Island Point	Anchorage, Hunting, Sergius Narrows	N	331
18.	Schulze Cove/Piper Island	Anchorage, Cabin	N	610
19.	Nakwasina Sound, East*	Dispersed camping, Shoreline, Hunting	M	250*
20.	Hemorrhoid Lake	Dispersed camping, Big game hunting	N	675
21.	Appleton Cove*	Big game hunting*	M	145*
22.	Head of Nakwasina Sound	Waterfowl hunting, Dispersed camping	M	569
23.	Rosenberg Lake	Dispersed camping, Big game hunting	N	2,076
24.	Nakwasina Passage Road System	Big game hunting, Hiking	M	1,254
TOTAL				24,621

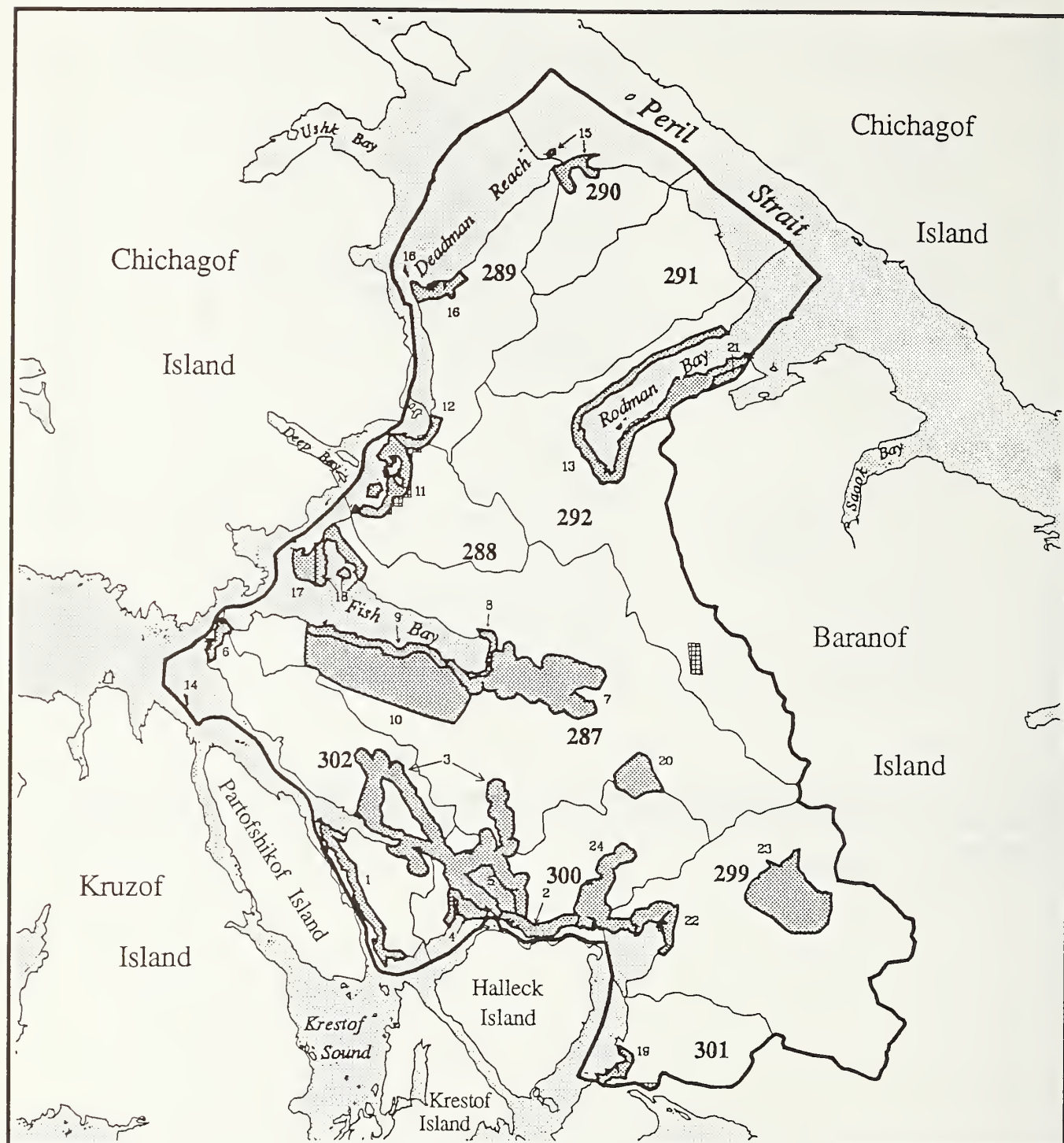
Source: Flynn 1995 Note: This information derived from Chatham Area GIS database.




*Recreation Place extends beyond the Project Area. Features and acres listed are only for that portion within the Project Area.

** N - natural, M - modified

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Figure 3-5
Recreation Places



-  Private Lands
-  Recreation Places
-  VCU Boundaries



Road Management

Some recreation opportunities within the Project Area are influenced by the existence and use of roads. The mere existence of a road changes the recreation setting. Roads are used as travel corridors for easier access to interior lands and for recreation activities specific to roads (e.g., recreational driving). The condition of these roads and the management objectives for public or other use of these roads are major factors influencing the recreation settings, activities, and experiences of visitors to the Project Area. We use Road Management Objectives (RMOs) in planning the design, maintenance, and access strategies for each road. We develop RMOs with their effect on recreation opportunities in mind. Additional information on RMOs is located in Appendix D.

The Forest Service has discouraged or eliminated motor vehicle access by allowing the roads to become overgrown with alder or by removing drainage structures. In most cases, existing RMOs which specifically prohibit motor vehicles refer to vehicles over 1,000 lbs. gross vehicle weight (GVW). The road systems in the Project Area are isolated. Access for vehicles over 1,000 lbs. GVW requires the use of large landing-craft type vessels to deliver the vehicles to the saltwater termini of the roads. Since a very small proportion of the roads in the Project Area are passable by larger vehicles, people have seldom, if ever, gone to the expense of bringing them in to use. Off-road vehicles (ORVs) are the primary type of motor vehicle used in the Project Area. ORVs can be brought to shore using a small boat. ORV operators are keeping the roads in the St. John Baptist Bay road system maintained and clear of brush to the extent necessary to operate their ORVs.

Roadless Areas

Large sections of the Project Area have been inventoried as roadless. This inventory was used at the Forest Plan level for evaluating an area's capability and availability for management as Wilderness or allocation to other roadless management prescriptions. This type of prescription recommendation is beyond the scope of project level planning; therefore, the roadless inventory is not further addressed in this document.

Recreation Special Use Permits

The Forest Service has issued special use permits to 25 outfitters and guides which allow them to operate in the Project Area. One additional permit is pending. The guides using the Project Area advertise wildland guided hunting, fishing, camping, sight-seeing, photography, wildlife viewing, and cultural ecotourism. Most of the guides access the area by boat. The Project Area lies in portions of State of Alaska Big Game Outfitter/Guide Use Areas 04-03, 04-04, and 04-13. Eight of the 26 Outfitters and Guides with existing or pending Forest Service special use permits are registered with the State of Alaska for outfitting and guiding big game hunts in the Project Area (Alaska Division of Occupational Licensing 1993).

In March 1994 the Chatham Area Forest Supervisor announced a moratorium on the authorization of any additional outfitter-guide special use permits for guided brown bear hunting on National Forest lands and waters within GMU-4. This moratorium was

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in effect for the full 1994 and 1995 hunting seasons. The moratorium allowed permits to be issued only to those outfitters and guides who possessed valid Forest Service permits for GMU-4 in the 1993 season. The number of brown bear hunting contracts allowed for each Outfitter/Guide were based on the number of contracts the Outfitter/Guide held in the 1992 and 1993 hunting seasons. All of the Project Area lies within GMU-4. The Forest Service imposed this moratorium in response to the significant increase in applications to the State for Outfitter Guide Permits for guiding brown bear hunting in GMU-4. The moratorium was intended to provide reasonable protection for the brown bear resource and to maintain the status quo while the State developed a long-term management system adequate to protect the wildlife resource, visitor experience, and guiding industry. It was also intended to protect reasonable opportunities for the public to secure guided hunts within GMU-4 until the State's solution was in place.

Although the State of Alaska has not implemented a system to directly limit the number of brown bear guides in GMU-4, the Forest Supervisor allowed the moratorium to expire on December 31, 1995. Although the moratorium has ended, it may in the future be necessary to place restrictions on brown bear guides. The Forest Service is committed to completing a carrying capacity analysis of GMU-4 in 1996 to determine what level of commercial use is appropriate. In addition, crowding, use, and impacts of brown bear guiding will be monitored. If necessary, future permitting for brown bear guides may be done by prospectus (Morrison 1995).

The moratorium on outfitter guide permits for brown bear hunting has caused the number of these permits the Forest Service has issued to be artificially low for the past two years. Demand for brown bear outfitter guide permits is higher than the total number issued indicates.

Wild and Scenic Rivers

The Chatham Area found no rivers within the Project Area eligible for inclusion in the National Wild and Scenic Rivers System (Supplement to the Draft TLMP Revision EIS, Appendix E). Determination of eligibility and suitability of rivers for the Wild and Scenic River System is not within the scope of project level planning.

Special Areas

The Supplement to the Draft TLMP EIS Appendix F identified the Fish Creek Hot Springs as a "Special Interest Area." In 1991 the "Sitka Ranger District Recreation Scoping Document" identified this same area in the Fish Creek drainage including the hot springs and its access trail as a high priority for recreational development. Plans for enhancement of the hot springs for recreational use included, if feasible, construction of an overnight shelter near the hot springs, and construction of a saltwater-accessible recreation cabin in Fish Bay. To date, only the recreation cabin has been built. It is located on Piper Island near the mouth of Fish Bay.

A similar recreation scoping effort done by the Sitka Ranger District in 1994 revealed little interest in developing the Fish Creek Hot Springs. Due to this apparent change in public desire, no additional development of the Fish Creek Hot Springs is planned for the immediate future.

The parcel of land extending south from Yellow Point, which includes Baby Bear Bay, Bear Bay, and Bear Island, has been selected by and conveyed to the State of Alaska for possible designation as a State Marine Park.

The Sitka District Coastal Management Program "Public Use Management Plan" (June 1993) prepared by the City and Borough of Sitka identifies the Fish Bay Hot Springs and Trail, the Big Bear/Baby Bear Bays State Marine Park, and the Nakwasina Passage to the head of Nakwasina Sound as "Special Management Areas." These "Special Management Areas" have been identified by the City and Borough as having significance due to high recreational use of the areas by the residents of Sitka. As part of the Coastal Management Program these areas are to be managed with special priority given to recreational use.

Scenic Quality

The tools we use to evaluate visual resources are Existing Visual Condition (EVC), Visual Quality Objective, Visual Sensitivity Level, and Variety Class. These tools are briefly described here, and are more fully defined in the Glossary.

Existing Visual Condition

EVC is an assessment of the current level of visual quality. EVC may range from Type I, where little or no human modification is apparent, to Type VI, where human-made changes in the landscape are in glaring contrast to the natural landscape. The acreage in each Existing Visual Condition class for Project Area VCUs is displayed in Table 3-34.

Table 3-34
Acres in Each Existing Visual Condition by VCU

VCU	EVC I	EVC II	EVC III	EVC IV	EVC V	EVC VI	Total Acres
287	37,107	0	0	3,297	1,988	0	42,392
288	7,126	0	0	0	0	0	7,126
289	7,950	0	607	3	0	0	8,560
290	4,000	0	1,241	21	0	0	5,262
291	3,139	0	342	718	7,811	0	12,010
292	7,763	0	0	385	16,159	0	24,307
299	16,804	0	304	6362	199	0	23,669
300	6,650	640	2,200	0	3,267	0	12,757
301	1,110	0	0	4,185	408	0	5,703
302	9,335	0	0	0	4,882	0	14,217
Total	100,984	640	4,694	14,971	34,714	0	156,003

Source: Ouderkirk 1994.

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Visual Quality Objectives

Visual Quality Objectives (VQOs) are visual resource management goals for National Forest System lands. VQOs provide a baseline for measuring changes for use in managing National Forest Lands. The VQOs are based upon the variety in the landscape, the distance between the landscape and the viewers, and how much the landscape is viewed. Project Area VQOs and acreages are shown by VCU in Table 3-35.

Table 3-35
Visual Quality Objectives by VCU

VCU	Retention		Partial Retention		Modification		Maximum Modification		Total Acres
	Acres	%	Acres	%	Acres	%	Acres	%	
287	777	2	15,676	37	15,072	36	10,867	25	42,392
288	319	5	4,360	61	880	12	1,567	22	7,126
289	218	3	7,915	92	0	0	427	5	8,560
290	0	0	3,944	75	1,236	23	82	2	5,262
291	0	0	6,487	54	2,397	20	3,126	26	12,010
292	0	0	3,203	13	18,867	78	2,237	9	24,307
299	595	2	4,184	18	17,718	75	1,172	5	23,669
300	200	2	5,767	45	2,412	19	4,378	34	12,757
301	143	3	2,264	40	2,600	45	696	12	5,703
302	968	7	7,239	51	3,095	22	2,915	20	14,217
Total	3,220	2	61,039	39	64,277	41	27,467	18	156,003

Source: Ouder Kirk 1994. Note: Each acre in a VCU is given a VQO. The VQO percentages of each VCU will add up to 100%.

Visual Sensitivity

Areas which are viewed from the Alaska Marine Highway System, heavily traveled small boat routes, roads, trails, and recreation facilities are areas of high visual sensitivity. Portions of all Project Area VCUs are visible from marine travel routes.

Variety Class

We consider Variety Classes when developing VQOs and in making management decisions. Variety Class A (1% of the Project Area) refers to "distinctive landscapes" where features of land form, vegetation patterns, water forms, and rock formations are of unusual and outstanding visual quality. Variety Class B (52.5% of the Project Area) refers to "common landscapes" where features contain variety in form, line, color, and

texture, or combinations thereof, but which tend to be common throughout the character type. Variety Class C (46.5% of the Project Area) refers to "minimal landscapes" where there are few changes in form, line, color, and texture.

Current Condition

The Project Area encompasses ten VCUs which are each distinct visual environments. Descriptions of the existing visual condition of each VCU follow.

VCU 287 includes Fish Bay and Schulze Cove. The majority of this VCU is Variety Class C, characterized by rolling terrain and occasional blocky outcrops. Dense spruce and hemlock forest add little textural and color diversity. The shoreline is simple, with few coves, inlets and streams. Entering Fish Bay, the simpler landscape provides a dramatic frame for Annahootz Mountain and the Fish Bay drainage system. Much of the main Fish Bay Creek drainage at the head of the bay is Variety Class B. It is a more diverse landscape with alder and spruce/hemlock forested tidal flats fed by numerous cascading streams and rivers. The tidal flats contrast with the powerful vertical slopes of the surrounding valley walls and snow-capped mountains. Fish Bay is a high-use area for commercial and sport fishing (Sensitivity Level 1), while the Fish Bay tidal flats are a hunting and fishing area (Sensitivity Level 2). Schulze Cove is used as a boat anchorage (Sensitivity Level 1). Portions of VCU 287 may be seen from the Forest Service Piper Island recreation cabin.

VCU 288 contains the southern portion of Peril Strait as well as Bear Bay, Baby Bear Bay and Adams Channel. The majority of the VCU is made up of a Variety Class C; this is particularly reflected in the seen areas, with a rolling topography and typical spruce/hemlock vegetation. The shoreline is close to travel routes along this stretch of Peril Strait which results in a greater amount of foreground. The remainder is middle ground. The shoreline provides a stronger contrast with tidal flats, secondary coves, inlets and islands lining the edge. These elements, in combination with a rocky, wave-cut shore and vegetative diversity, create a Variety Class B setting in the foreground. Secondary angular peaks, with vegetative, line, color, and textural diversity are seen beyond the surrounding Variety Class C middleground. The majority of this VCU is visible from the Alaska Marine Highway route and from Level 1 small boat and Level 2 plane routes. Baby Bear Bay, a State Marine Park Selection, contains a Level 1 anchorage surrounded by a Variety Class C landscape. The intimacy of this area and the domination of isolated B-rated peaks in the middleground create a cumulative scene greater than the inventoried Variety Class. All of VCU 288 can be seen from the adjacent anchorage in Deep Bay (VCU 280).

VCU 289 contains the northern portion of Peril Strait and Deadman Reach. Traveling north through this VCU, the nearby shore and the dominance of foreground gives way to the open waters of Peril Strait. Most of the shore foreground is made up of a weak edge, while the middleground lacks vegetative and geologic diversity resulting in a Variety Class C rating. The southern portion of the shore shares the same tidal vegetation species and geologic variety as in VCU 288, and is especially prominent during low tides. The northern extent of this VCU is viewed in the middleground and becomes more heavily sloped, characterized by defined crests, blocky profiles, and secondary peaks. These slopes, Variety Class B, contain a variety of color, texture and line, and act as a backdrop for the entire VCU. Povorotini Island is within the

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foreground of this VCU and contains definite edge contrast and spatial definition (Variety Class B) when compared to the surrounding landscape. Regeneration of previous harvest areas on the steeper slopes along Deadman Reach has an EVC Type III rating. This VCU has the Alaska Marine Highway route and a small-boat route running through its entirety, and a great majority of the site is visible from this Level 1 sensitivity travel route. Deadman Reach is used as a commercial fishing area (Level 2). Portions of this VCU may be viewed from the Forest Service shelter located on Otstoia Island.

VCU 290 includes the northcentral area of Duffield Peninsula, Nismeni Cove and Otstoia Island. Similar to the northern extent of VCU 289, this VCU contains steep slopes and dominating peaks and crests in the background. The typical dense spruce/hemlock vegetation creates minimal variety in the landscape and therefore a Variety Class C middleground. This landscape makes up much of the VCU (43%), while the background of diverse secondary peaks and crests is Variety Class B. The shoreline is rocky but lacks any further unique characteristics. Otstoia Island has similar but more interesting geology with small beaches and rocky shores. Two existing timber harvest areas are visible from water travel routes. The regrowth has become sufficient to "mask" much of the cut. However, the color contrast is obvious. Nismeni Cove is used as a Level 1 anchorage. Much of the VCU can be seen from the Alaska Marine Highway route in Peril Strait, as well as small-plane and boat routes. A portion of Deadman Reach is within this VCU and is used by commercial fishermen. Portions of VCU 290 may be seen from the Forest Service shelter located on Otstoia Island.

VCU 291 includes northeast Duffield Peninsula and Peril Strait in the area of Peschani Point. The majority of this VCU is in middleground and background, with a large portion unseen due to the topography. The water edge is made of gently sloping terrain with minor coves and spruce/hemlock vegetation and lacks diversity. An unseen valley floor with moderately complex valley walls runs through much of the VCU. This topographical diversity, with its cascading streams and slight variation in the vegetation, lends the valley walls to a Variety Class B, while the valley floor rates a C. The southeast portion of VCU 291, which is highly visible from the Alaska Marine Highway route, has recently been harvested and shows sufficient regeneration to rate the area as a Type IV EVC. The VCU is seen primarily as middleground from the Level 1 small boat, Level 2 small plane and Alaska Marine Highway routes.

VCU 292 includes Rodman Bay and the Rodman Creek drainage basin. The entrance of Rodman Bay has moderately complex terrain, with well-defined secondary crests. However, the northern side of the Bay has been heavily harvested and these activities have created a distinct pattern and texture, contrasting with the old-growth character. The north slope also has little topographic variety, and the bay edge has little diversity, although the rocky coast and vegetative edge provide some interest. These characteristics result in the north slope having a Variety Class C, while the south slope contrasts with a rolling terrain and stronger shore edge to rate a Variety Class B. At the head of the bay, the tidal flats lend diversity to both terrain and vegetation. Blocky terrain with strong angular peaks forms the backdrop. The spruce/hemlock forest gives way to naturally occurring openings with cascading water, creating great diversity and a B Variety Class. Much of the valley has been harvested, in both seen and unseen areas, and lends itself toward an EVC rating of Type V. This is also true for the harvested bay edges which are highly visible. The majority of this VCU is unseen

beyond the aforementioned seen areas of Rodman Bay. The entrance is viewed as middleground with the tidal flats and drainage basin as background.

VCU 299 consists of the drainage area for the northeast portion of Nakwasina Sound. The majority of this VCU is unseen, while steep dramatic slopes make up the seen areas. A large tidal flat in the foreground is surrounded by steep slopes cut by cascading streams. Although visually dramatic, much of the diversity is masked by a thick covering of spruce and hemlock. Cascading streams and occasional rocky outcrops create a Variety Class B setting, while the higher altitudes have rocky peaks, vegetative diversity and small snow fields. Craggy, snow-capped peaks rise in the background. Nakwasina Sound is used as a Level 1 small-boat and Level 2 small-plane route. The area is also a Level 1 hunting and fishing use area.

VCU 300 includes Nakwasina Passage and most of Halleck Island. Halleck Island has been excluded from the Project Area so only that portion of the VCU on Baranof Island is being considered. North of Nakwasina Passage the terrain is greatly varied, as ridges modified by streams rise above a large tidal flat. The seen portion of this area is foreground and middleground. However, much of this VCU is unseen. This entire area is blanketed by the typical spruce/hemlock vegetation, which masks any geological diversity. This lack of diversity results in much of the landscape rated Variety Class C. The tidal flat in the foreground does offer vegetative and textural diversity, and rates a B. The largest peak in this area also has vegetative variety, as well as angular peaks and blocky outcrops, and this middleground feature is classified as a Variety Class B. Nakwasina Passage is used as a Level 1 small-boat route and hunting and fishing area.

VCU 301 contains the southern portion of Nakwasina Sound. A vast majority of this small VCU is unseen. Seen areas are viewed in the foreground and middleground. The foreground includes a tidal flat and steep, sloped ridge. The landscape is a somewhat monotonous blanket of spruce/hemlock (Variety Class C). Much of the lower portion of this ridge has been harvested. The ridge line contains secondary peaks and vegetative diversity and is typical for Variety Class B. Behind this ridge rise two higher ridges with stronger peaks, vegetative diversity and geological features which extend farther down the slope. These areas are viewed as middleground and qualify as Class B. Nakwasina Sound is used as a Level 1 small-boat and Level 2 small-plane route, while the area is also a Level 1 hunting and fishing use area. Portions of VCU 301 may be viewed from the Forest Service Allan Point recreation cabin.

VCU 302 is the area between Salisbury Sound and Nakwasina Passage, runs parallel to Neva Strait and Olga Strait, and contains St. John Baptist Bay. The portion of this VCU on Partofshikof Island has been excluded from the Project Area. The narrow width of this VCU, with Olga and Neva Strait flowing through it, results in a majority of this VCU being seen in the foreground and middleground. Much of this area lacks vegetative, geologic, and terrestrial variety. The smooth rolling hills lack outcrops, and are forested by a spruce/hemlock community with many snags. The majority of the VCU is Variety Class C, with Variety Class B representing the balance. The shore, which is close to Level 1 sensitivity travel routes, has limited interest from a distance, but a more interesting landscape can be seen when traveling along the shoreline. The shoreline along Salisbury Sound becomes rocky and craggy and this narrow foreground strip receives a B Variety Class. Shoreline areas of the VCU are hunting and fishing use areas (Level 1). Olga and Neva Straits are Level 1 sensitivity routes used by

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the Alaska Marine Highway and small boats. Whitestone Cove is used as a Level 1 boat anchorage. St. John Baptist Bay is used by small boats (Level 2). Portions of VCU 302 may be viewed from the shelters in Neva Strait and Kakul Rocks.

TLMP Retention Factors

TLMP Retention Factors are elements of a method that was used in the TLMP planning process to provide line officers and interdisciplinary teams the latitude to manage certain wildlife, fish, and visual resource values which could be adversely affected by timber harvest activities. These normally involve those areas identified as Visual Management Class 1 and the more restrictive components of Class 2 areas (R10 FSH 2309.16, Forest Service 1986). Table 3-36 summarizes the TLMP database displaying acres of CFL to be managed in an extended rotation for each of the VCUs within the Northwest Baranof Project Area.

Table 3-36
Extended Rotation Acres

VCU	Total Extended Rotation Acres Available for Harvest
287	6,775
288	1,485
289	3,649
290	1,200
291	1,989
292	5,993
299	1,152
300	3,119
301	n/a
302	2,471

Heritage Resources

Heritage Resources are limited and nonrenewable and are found throughout the entire National Forest System. It is our responsibility to manage these limited assets through a program of inventory and protection so that they can be enjoyed by future generations.

We evaluate heritage resources within the Project Area in accordance with the National Historic Preservation Act (NHPA) of 1966 as amended, the National Environmental Policy Act (NEPA) of 1969 and a series of implementing regulations and policies. In this analysis we consider two types of heritage resources: traditional properties and historic sites. Traditional properties are areas or events of cultural importance. Historic sites are places or locations where material remains of past human life or activities are present. A historic site, sometimes called a cultural resource, is a tangible, locatable resource.

One result of our analysis is that archeologists have identified one possible traditional property and numerous historic sites within the Project Area. The identification of all types of heritage resources has been and continues to be facilitated by open and candid consultation with representatives of the Sitka Tribe of Alaska (STA).

Cultural History

Southeast Alaska is part of the Northwest Coast culture area which extends from the Gulf of Alaska to northern California (Suttles 1990). There are more than 2,000 known historic and prehistoric sites in Southeast Alaska. Archeological excavations have provided evidence of the presence of humans here for the last 9,500 years. In Southeast Alaska, archeological sites dating to before 1741 are representative of the Prehistoric Period and those dating to after 1741 belong to the Historic Period. As the prehistory of Southeast Alaska spans more than 9,000 years, archeologists have subdivided it into an Early Period (9,500 - 5,000 years ago), a Middle Period (5,000 - 1,500 years ago) and a Late Period (1,500 years ago to 1741) (Moss 1990). Microblade tools are commonly associated with sites of the Early Period, while shell middens and ground stone tools are associated with sites of the Middle and Late Periods.

Southeast Alaska is the home of the Tlingit, Alaskan Haida (Kaigani), the Tsetsaut and Eyak. Of the four, the Tlingit have been dominant, controlling at one time or another the entire southeastern panhandle from north of Yakutat Bay to Dixon Entrance (Arndt et al. 1987).

The Tlingit are a "nationality" based upon common language and customs (de Laguna 1990). Subdialect differences define three Tlingit groups, each containing several tribes. The subdialect areas are: the Gulf Coast (Yakutat and Dry Bay tribes), Northern Tlingit (Chilkat, Hoonah, Hutsnuwoo, Auk, Taku, Sumdum, and Sitka tribes), and Southern Tlingit (Kake, Kuiu, Henya, Klawock, Stikine, Sanya, and Tongass tribes). Each tribe occupied a specific region, and use of this region was divided according to clan rights (de Laguna 1990).

The bulk of the Project Area falls into the territory traditionally claimed by the Sitka Tlingit. A small portion of the Project Area falls into the territory traditionally claimed by the Angoon Tlingit.

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Sitka Territory extends the full length of the Pacific Coast of Chichagof and Baranof Islands from Point Urey in the north to Cape Omaney. It includes, of course, all the myriad islands lying off the coast. It extends inward up Peril Strait between Chichagof and Baranof Islands into Hoonah Sound as far as Patterson Bay... (Goldschmidt and Haas 1946).

There is no definitive boundary between the Sitka and Angoon territories within Peril Strait. "Peril Strait as far [west] as Poison Cove was Angoon Territory" (Goldschmidt and Haas 1946).

Sitka Territory touches that of Angoon in Peril Strait. The detailed information available on Sitka occupation of Poison Cove, Ushk Bay, Fick Cove and Patterson Bay supports the Sitka contention that this area is properly assigned to their community. Statements made by Angoon witnesses are not in disagreement (Goldschmidt and Haas 1946).

History

The historic period in Southeast Alaska began with European exploration. The Russian Kamchatka Expedition of 1741 was the first to reach the coast; however, European presence was slight until 1774. From 1774 to 1795, ships from Russia, Spain, England, France, and the United States visited Southeast Alaska and their arrival initiated dramatic changes in regional subsistence and land use patterns. Disease and conflict reduced the Native population, Russian settlements and forts were built, and trade of sea otter for European goods became important (Arndt et al. 1987, Bower 1995). The sale of Alaska to the United States in 1867 ushered in more change. During the nineteenth and early twentieth centuries a variety of commercial and government ventures were undertaken in Southeast Alaska, including fox farms, mines, World War II military installations, homesteads, timber harvest, commercial fishing, and Civilian Conservation Corps projects (Arndt et al. 1987, Bower 1995).

Previous Cultural Resource Surveys

Our initial literature search revealed that prior to 1992 nine cultural resource inventories had been conducted by the Forest Service, Bureau of Indian Affairs, or Sealaska Corporation within the Project Area. These surveys consisted of small project-specific inventories involving limited acreage. Previous timber sales in the Project Area date to the 1950's and 1960's, prior to any heritage resource management activities on the Chatham Area (Table 3-37).

Table 3-37
Previous Archeological Investigations Conducted in the Project Area

Location	Year	Project	Investigator	Sites
VCU 287				
Fish Bay	1985	Native Allotment A033472 Annie Davis*	Navarre	49SIT300
Fish Bay	1991	Fish Bay Rec Cabin	Irish	none
Fish Bay	1991	Fish Bay Trail Reconstruction	Irish	none
VCU 299				
Nakwasina Sound	1975	Sealaska Surveys+	Herem	none
Katlian Bay	1985	Native Allotment J-010940 heirs of Mary Gray	Navarre	none
VCU 300				
Nakwasina Passage	1975	Sealaska Surveys	Herem	none
VCU 302				
St. John Baptist Bay	1985	Native Allotment A-060988	Navarre	none
Kakul Narrows	1991	Kakul Narrows Shelter	Lively	none
Otstoia Island	1991	Otstoia Island Shelter	Lively	none

*Native Allotment surveys conducted by the Bureau of Indian Affairs. +Sealaska Corporation surveys conducted by Wilsey and Ham, Inc. Source: Myron 1993.

Nine reported and unconfirmed site locations were identified during the preliminary literature search. The list included sites listed on the Alaska Heritage Resource Survey which had not been confirmed, sites listed as "unconfirmed sites" in "Native Cemetery and Historic Sites of Southeast Alaska" (Herem 1975), and possible site locations identified during the ethnographic research explained below.

Heritage Resource Investigations 1992-1995

Heritage resource investigations include ethnographic and ethnohistoric research and archeological survey. Ethnographic and ethnohistoric research helps us to identify possible historic site locations and traditional properties. Systematic archeological survey, based on a sound survey design, is an effective means of identifying historic sites; that is, "any place or location where material remains of past human life or activities are present" (Hutt 1992).

Ethnography is the study of cultures through observation. **Ethnohistory** is the study of cultures of the recent past through oral histories and accounts left by explorers, missionaries, and traders.

Ethnographic Investigations

Archeologists and volunteer cultural anthropologist Dr. Dorteia Theodoratus contacted the Sitka Tribe of Alaska and individuals within the Native community in order to gather Tlingit knowledge of the Project Area. Dr. Theodoratus shared the preliminary results of her work with us and she is currently finalizing her notes. Her preliminary findings were used, in part, to guide field inventory efforts.

Fred Hope, a Sitka Tlingit, worked with Forest Service archeologists to research the significance of some of the historic sites in the Project Area and identify Tlingit names for a number of the sites. Consultation with the Sitka Tribe of Alaska continues to help

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us identify historic sites and the less tangible, but important, traditional properties in the Project Area.

Probability and Archeological Survey

The 1992 and 1993 archeological surveys focused on specific acreage lying within the "high probability zone" for cultural resources. "High" probability simply means that, based on previous archeological surveys, it is likely an historic site may lie within a predefined geographic or physical setting. The "high probability zone" for Northwest Baranof is sea level to the 100-foot contour. Drainages and lakes which have historically contained anadromous fish species are also included, as well as mineralized zones containing historic mining activities, areas of traditional ethnohistoric subsistence use and legend sites (Autrey 1992).

During 1992 and 1993 archeologists systematically surveyed 93% of the acreage and 100% of all areas of proposed project activity (cutting units, roads, and log transfer facilities) lying in the high probability zone. They also investigated unconfirmed sites and inspected known ones. In total the four-person field crew surveyed 11,520 shoreline acres, 41.25 miles of proposed roads, 404 acres in 11 cutting units, and seven proposed log transfer facility locations. They also monitor surveyed 55.75 miles of existing roads and six existing log transfer facility sites.

Traditional Properties

In consultation with the Sitka Tribe of Alaska, Forest Service archeologists have identified one possible traditional property in the Project Area, the Sitka Kiks.adi Survival March Route. Following the Battle of 1804 with the Russians, the Sitka Kiks.adi left Sitka and traveled overland to Hanus Bay in Peril Strait (Hope 1993). Such a Survival March (as it has come to be known) would have necessitated travel across the north end of Baranof Island. No physical or material remains associated with the event have been identified within the Project Area.

During 1993 and 1994, our archeologists attempted to compile enough information about the Survival March Route to recommend to the State Historic Preservation Officer that the route be considered eligible for inclusion in the National Register of Historic Places. In conducting the research, we discovered that there are many different versions of the story of the Survival March and that the route chosen during the recent reenactment was just one of several possible routes. Since the route does not consist of a discernible physical trail, our archeologists did not feel they had adequate information to complete their recommendation.

Consequently, we consulted with STA staff several times during 1995 concerning how best to proceed with the Survival March Route nomination. All parties agreed that STA should take over the nomination effort. STA is best able to coordinate meetings among it's tribal elders in order to reach consensus concerning the exact route taken by the marchers in 1804. Consequently, we supplied a copy of the nearly complete National Register Registration Form to STA staff. STA plans to reach a group consensus concerning the specific route. Once this is accomplished, we will continue to assist STA with the nomination.

Historic Sites

Archeologists documented 47 sites during the 1992 and 1993 field seasons. Thirty-two of the sites are prehistoric, seven are historic, and three are both prehistoric and historic. The dates for four are either unknown or modern. Forty-two of the sites are eligible for inclusion in the National Register of Historic Places.

Table 3-38 lists Alaska Heritage Resource Survey (AHRS) numbers for each site, it's associated site type and the results of radiocarbon analysis. The table also shows whether the site is prehistoric or historic and indicates whether or not it is eligible for inclusion on the National Register.

Table 3-38

Summary of Historic Sites Documented in the Project Area

AHRS # 49SIT-	Site Type	Radiocarbon Age	Period	NRHP Eligible?
VCU 287				
300	habitation	1510 ± 60	Middle Prehistoric	Yes
	garden	-	Historic	
335	midden	-	Undated	Yes
359	rock align.	-	Prehistoric	No
360	Cabin	-	unknown	No
382	habitation	1240 ± 80	Historic	Yes
383	garden	-	Late Prehistoric	Yes
384	military	-	Historic	Yes
385	cabin	-	Historic - WWII	No
			Historic	
VCU 288				
353	midden	1430 ± 90	Late Prehistoric	Yes
354	midden	890 ± 90	Late Prehistoric	Yes
355	midden	-	Undated	Yes
357	rock align.	-	Prehistoric	No
358	Midden	1120 ± 60	unknown	Yes
			Late Prehistoric	
VCU 289				
432	habitation	1100 ± 80	Late Prehistoric	Yes
VCU 290				
433	habitation	760 ± 70	Late Prehistoric	Yes
		1340 ± 70	Late Prehistoric	Yes
VCU 291				
356	midden	1250 ± 70	Late Prehistoric	Yes
VCU 299				
404	cabin	-	Historic - WWII	Yes

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Table 3-38

Summary of Historic Sites Documented in the Project Area

AHRS # 49SIT-	Site Type	Radiocarbon Age	Period	NRHP Eligible?
VCU 300				
397	habitation cabin	1870 ± 70 -	Middle Prehistoric Historic	Yes
398	fish weir	modern	modern	Yes
399	midden	670 ± 70	Late Prehistoric	Yes
400	rock align.	-	unknown	No
401	structures	-	Historic - WWII	Yes
402	midden	870 ± 70	Late Prehistoric	Yes
403	midden	390 ± 70	Late Prehistoric	Yes
407	habitation	1070 ± 90	Late Prehistoric	Yes
408	midden	1360 ± 70	Late Prehistoric	Yes
409	midden	1260 ± 90	Late Prehistoric	Yes
VCU 301				
410	habitation	1220 ± 90	Late Prehistoric	Yes
411	midden	830 ± 90	Late Prehistoric	Yes
412	midden	510 ± 70	Late Prehistoric	Yes
413	midden	1100 ± 80	Late Prehistoric	Yes
414	habitation	710 ± 90	Late Prehistoric	Yes
415	habitation	760 ± 80	Late Prehistoric	Yes
VCU 302				
386	habitation	1940 ± 90	Middle Prehistoric	Yes
387	midden	1150 ± 70	Late Prehistoric	Yes
388	midden	1080 ± 80	Late Prehistoric	Yes
389	midden	1080 ± 70	Late Prehistoric	Yes
390	midden	800 ± 80	Late Prehistoric	Yes
391	midden	1970 ± 60	Middle Prehistoric	Yes
392	military	-	Historic - WWII	Yes
393	habitation	740 ± 90 920 ± 80	Late Prehistoric Late Prehistoric	Yes
394	habitation	1820 ± 90	Middle Prehistoric	Yes
395	habitation	1630 ± 80	Middle Prehistoric	Yes
396	habitation	970 ± 80	Late Prehistoric	Yes
405	midden	1450 ± 90	Late Prehistoric	Yes
406	habitation recreation	1410 ± 70	Late Prehistoric Historic - WWII	Yes

Source: Myron 1993.

Relationships Between Heritage Resources, Subsistence, and Native Allotments

There is a strong relationship between heritage resources, subsistence, and Native allotments in the Northwest Baranof Project Area. This includes the relationships between historic sites, traditional properties, customary and traditional uses, and Native land ownership. These relationships are difficult to illustrate in a document like an environmental impact statement. However, it is still very important to recognize these relationships.

During scoping for this Project, Sitka Tribe of Alaska submitted a "Tribal Environmental Impact Statement" and a set of overlays to the Forest Service which describes some of these interrelationships. Tribal staff indicate that elders find it difficult to identify allotments, culturally significant sites, and subsistence use areas as separate entities. "From their perspective it was wrong to distinguish between what was important to them about allotments, culture, and resources as food." Further, "there should be no distinction because to make a distinction is to lose sight of what is important culturally, spiritually, and socially," Similarly, "areas of traditional and customary gathering include a distinct and crucial cultural component."

Virtually all "culturally significant sites" identified by the Sitka Tribe of Alaska correspond to historic site(s) documented by Forest Service archeologists during field surveys. All "culturally significant sites" and "historic sites" lie within subsistence use areas indicated by STA. Six "historic " sites identified by Forest Service archeologists lie within the limits of Native allotment applications. These actual overlaps of sites and areas confirm the interrelationships and reaffirm the need for continuation of an interdisciplinary and integrated analysis.

Land Status

The Project Area contains the following alienated lands, encumbrances, use restrictions, and partial interests.

State, Municipal, and Private Lands

State, municipal, and private lands are not owned by the United States. The following State, municipal, and private lands are located within the Project Area:

- MS (Mineral Survey) 554 (181.767 acres), located in VCU 292 along Rodman Creek
- MS 555 (55.407 acres), located on the shore of Rodman Bay in VCU 292
- AA-71690 at Lisianski Peninsula - Katlian Bay, located in VCUs 301, 310, and 313, conveyed to the State of Alaska by Tentative Approval dated August 1, 1995
- AA-71693 at Baby Bear, located in VCU 288, conveyed to the State of Alaska by Tentative Approval dated September 7, 1995

State Selections

Section 6(a) of the Alaska Statehood Act of 1958 authorized the State of Alaska to select 400,000 acres of vacant and unappropriated land from within the National Forests of Alaska for furthering the development and expansion of Alaskan communities. The following lands within the Project Area have been selected by the State of Alaska under Statehood Act authority but have not yet been conveyed by the Bureau of Land Management (BLM):

- AA-71691 at Lisianski Peninsula - Nakwasina Sound, located in VCUs 301 and 313

Native Allotment Applications

Native allotments are authorized by the Alaska Native Allotment Act of 1906, which provided an opportunity for Native individuals who had occupied lands prior to their designation as a National Forest to apply to the BLM for conveyance of up to 160 acres, under conditions prescribed by the Act and Federal regulations (43 CFR 2561). Section 18(a) of ANCSA repealed the Alaska Native Allotment Act with a savings clause which provides that allotment applications submitted prior to enactment of ANCSA (December 18, 1971) would still be processed. The following unconveyed Native allotment applications are located within the Project Area:

- A-033472 (Annie Davis, deceased), 4 acres located at Fish Bay in VCU 287;
- A-060985 (Johnny John, deceased), located at Nakwasina Sound in VCUs 301 and 313;
- J-010940 (heirs of Mary Gray, deceased), located at Nakwasina Sound in VCU 299 (application approved January 28, 1993);
- J-011250 (Eddie Marshall, deceased), located at Nakwasina Sound in VCUs 301 and 313;
- J-011911/A-060988 (Peter John), located at St. John Baptist Bay in VCU 302.

Withdrawals

Withdrawals close lands to further entry under the Federal land laws, Federal mining laws, or both. These withdrawn lands are set aside for specific purposes stated in the instrument that created the withdrawal. Incompatible uses are precluded, in accordance with the withdrawal language.

The following withdrawals are located within the Project Area:

- Lighthouse Reserve at Otstoia Island, located in VCU 290;
- Lighthouse Reserve at Kakul Narrows, located in VCU 302; and
- Lighthouse Reserve at Povorotni Island, located in VCU 289.

Administrative Classifications

Like withdrawals, administrative classifications appropriate land for a particular purpose which is stated in the document establishing the classification. Unlike withdrawals, classifications are established within the Department of Agriculture. They can be rescinded at the same level of authority that established them. Incompatible uses will be precluded, in accordance with language in the classification.

There is one administrative classification located within the Project Area. It is a Public Service Site (Schulze Cove Dock Site), located in VCU 287.

Rights-of-Way Acquired

These are rights-of-way acquired for administrative use by the Government or for public use. They include rights-of-way reserved from conveyance and those acquired after conveyance. Depending upon language within the applicable documents and type of grant, they may allow for construction, maintenance, use, reconstruction, or relocation of roads, trails, or other facilities.

There is one acquired right-of-way located outside of, but associated with the Project Area. It is Alaska State Tideland Permit SET-93-028 (issued April 20, 1993, expires April 19, 1998), which authorizes construction of a barge facility and access dock at Appleton Cove in VCU 293, within Sec. 10, T. 51 S., R. 63 E., CRM. Also see corresponding Department of the Army Corps of Engineers permit Appleton Cove 4, as modified.

Non-Recreation Special Use Authorizations

"Special use authorization" is a generic term that includes specific types of authorizations, such as a special use permit, temporary permit, term permit, easement, or lease. A special use permit does not grant an interest in National Forest System lands; however, a lease or an easement generally does.

There is one non-recreation special use authorization located within the Project Area. It is a special use permit for a shelter (tent platform), located on an unnamed lake approximately 1.5 miles north of Nakwasina Passage in VCU 300, within the SW4, Sec. 18, T. 53 S., R. 63 E., CRM.

Transportation Systems and Facilities

Roads

There are 84.8 miles of existing road in the Project Area. Of these, 40.8 miles are collector roads, 33.5 miles are non-system roads, and the remaining 10.5 miles are classified as local roads (Table 3-39). The Project Area contains no State highways, ferry terminals, or airports.

Roads in the Project Area were built in the 1960's for timber harvest and many are now overgrown with alder. Culverts and bridges were removed to allow for proper cross drainage and to reduce washing out of the roadways.

Table 3-39
Miles of Existing Road

VCU	Non-System Miles	Collector Miles	Local Miles	Total Miles
287	3.0	6.6	3.0	12.6
291	4.0	6.6	0.0	10.6
292	11.6	13.1	1.3	26.0
299	10.6	0.0	0.4	11.0
300	2.6	4.6	3.8	11.0
301	0.7	3.9	0.0	4.6
302	1.0	6.0	2.0	9.0
Total	33.5	40.8	10.5	84.8

Source: Allio 1995.

Logging Camps

There are no logging camps in the Project Area at this time. During past timber harvest there were logging camps located in Rodman Bay, Fish Bay, St. John Baptist Bay, and Nakwasina Sound. All logging camps were removed after harvest was completed. All that remains of any of the logging camps is a flat spot on the landscape that has been overgrown with alder and other vegetation. Where a float camp was used, no trace of the camp was left on site.

Marine Transportation

There is only one marine transportation route connecting Sitka to the rest of Southeast Alaska. The route borders the Project Area on the north and west and is used by tour boat operators, barge lines, and the Alaska Marine Highway.

The Alaska Marine Highway is a popular mode of transportation for visitors to Southeast Alaska. Travelers can relax in the comfort of the ferry and enjoy the

surrounding landscape and seascape. The ferry schedule varies from summer to winter, with less frequent service in the winter.

Log Transfer Facilities

The eight LTF sites which currently exist in the Project Area (Figure 3-6) have not been active since the late 1960's. All of the LTFs were constructed as bulkhead/A-Frame type log transfer facilities. These LTF sites have been allowed to grow over with natural vegetation and some of the fill has washed out. The LTFs are in different states of deterioration. They are located in Rodman Bay, Fish Bay, St. John Baptist Bay, and three in Nakwasina Sound. These sites were in existence prior to the establishment of the current LTF siting guidelines. Figure 3-6 shows the previously used LTF sites. Of the existing sites, Fish Bay LTF does not meet the criteria to site LTFs away from the mouths of anadromous fish streams.

In 1976 Schultz and Berg reported the following bark coverage in the salt water, in acres, for six of the LTF sites in the Project Area.

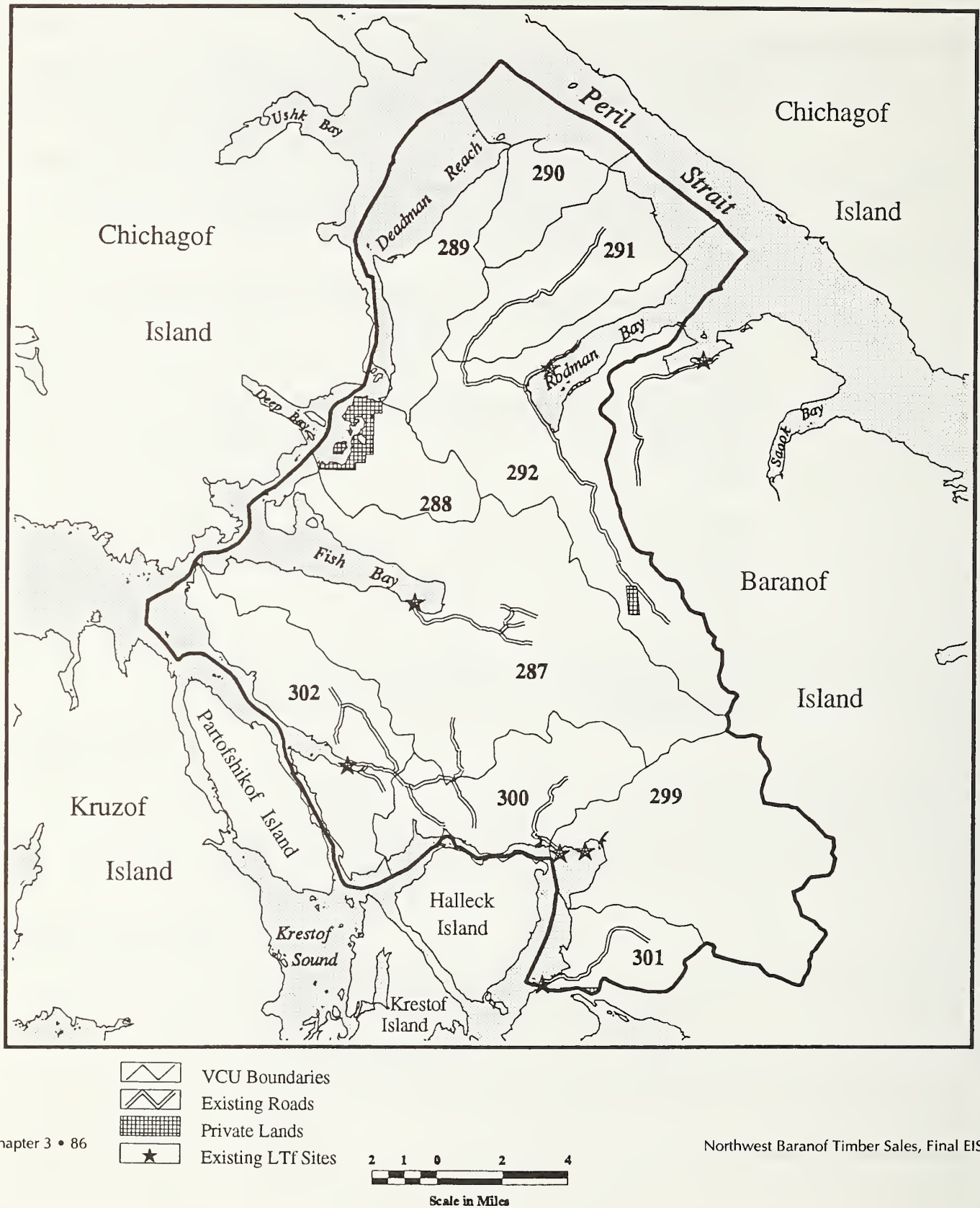
Table 3-40
Bark Coverage at Previously Used Log Transfer Facility (LTF) Sites

LTF Location	Bark Coverage in Acres
Fish Bay	1.6
Katlian Bay	0.8
Nakwasina 8	3.8
Nakwasina 9	0.0
Rodman Bay	2.8
St. John Baptist Bay	1.5

Source: Allio 1995.

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Figure 3-6
Previously Used LTF Sites



Off-Site Human Environment

Economics

Regional Perspective

The importance of the Tongass National Forest to the regional economy cannot be over emphasized. Most communities in Southeast Alaska are characterized by a dependence on one or more natural resource-based industries including wood products, commercial fishing and fish processing, tourism and commercial recreation, mining, and mineral development. Government (especially in Juneau), transportation services, and educational services are also significant income sources. Residents of the numerous small, rural communities also depend heavily on subsistence fishing and hunting to meet their basic needs. The following section provides an overview of the regional economy and the economy of Sitka.

Regional Economics

The Project's primary area of social and economic influence is Southeast Alaska. This geographic region extends roughly 500 miles from Ketchikan in the southeast to Yakutat in the northwest. The Tongass National Forest constitutes nearly 80 percent of Southeast Alaska and is the largest forest in the National Forest System. Southeast Alaska's population of 69,000 is divided among 33 cities, towns, and villages which are surrounded by, or located very near the boundaries of the Tongass.

Human settlements in Southeast Alaska range in size from one-person private home sites to a 28,000-person full-service community (Juneau). Most settlements are accessed exclusively by aircraft, boat, or the Alaska Marine Highway system. Haines and Skagway are the only communities which have direct highway access to Canada and the rest of the United States. Some communities are connected to forest road systems which may allow them access to private, State, or National Forest lands or to other small communities. These systems are not connected to Canadian or U. S. highways and the communities are thus very isolated. This relative degree of remoteness, combined with the considerable scenic and recreation opportunities provided by the Tongass National Forest, is sought by many who desire a more self-reliant lifestyle. Residents are often quick to point out that the quality of life found in Southeast Alaska outweighs the possible disadvantages of seasonal employment, lack of jobs, costs of importing goods and services, transportation difficulties, and bad weather.

Most residents of communities in Southeast Alaska depend directly on the environment for their livelihood through commercial fishing and fish processing, timber harvesting and processing, mining, tourism, commercial recreation, and/or subsistence use (Table 3-41). Because there is only a limited amount of private land in the region, continued

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access to the abundant natural resources of the Tongass is of utmost importance to many residents.

Table 3-41
Southeast Alaska Wage and Salary Employment 1994 and 1996 Forecast

	Annual Average Employment 1994	Forecasted Annual Average Employment 1996	Forecasted Change from 1994 to 1996
<u>Goods Producing</u>			
Mining	150	225	+75
Construction	1,550	1,525	-25
Manufacturing	4,150	3,800	-350
Seafood Processing	1,650	1,525	-125
Forest Products	2,200	1,950	-250
Subtotal	5,850	5,550	-300
<u>Service Producing</u>			
Transportation	2,900	2,975	+75
Trade	6,550	6,750	+200
Wholesale	550	550	0
Retail	6,000	6,200	+200
Finance, Insurance, Real Estate	1,450	1,600	+150
Services and Misc.	6,200	6,575	+375
Government	12,300	12,100	-200
Federal	2,000	1,950	-50
State	5,350	5,250	-100
Local	4,950	4,900	-50
Subtotal	29,350	30,000	+650
Total	35,200	35,550	+350

Source: Morse 1994.

A mixture of employment growth and decline is projected for Southeast Alaska in the near term. Gains are expected in the mining industry following the reopening of the Greens Creek mine on Admiralty Island. Construction employment is expected to increase in response to a number of residential and public works projects. As the number of visitors to Southeast Alaska continues to increase, employment in the services and retail trade sectors of the economy will also increase. The gains in these industries are expected to be tempered, however, by the effects of the Wrangell mill shutdown as well as the Sitka pulp mill closure. The outlook for government employment is poor. Budget concerns are expected to lead to job cuts by government

agencies. In the fishing industry, a new individual fishing quota system instituted for some fish species is expected to reduce the number of seasonal and short-term processing and fishing crew positions.

Community Economics

The largest community near the Project Area is Sitka (population 8,588), which is located approximately 5 miles south of the southern end of the project boundary. Sitka is located on the west side of Baranof Island and is the only community in Southeast Alaska which fronts the open sea. Sitka was originally settled by the Tlingit people. Alaska Natives represent about 21 percent of the population today. The rich coastal resources of the area, especially the sea otter, attracted traders of many nationalities including Russian, American, and English. By 1799, Sitka Sound was a favored trading spot on the northwest coast. Sitka was the capital of Russian America until 1867 when Alaska was purchased by the United States.

Sitka became the seat of the territorial government in 1884 and remained the hub of activity until the capital moved to Juneau in 1896. In the years following the capital move Sitka's economy depended almost entirely on fishing and fish processing. After nearly fifty years the commercial fishing and cannery boom ended for most of Southeast Alaska leaving a severely depleted salmon resource. In recent years the canneries have been replaced by cold storage facilities in Sitka, and commercial fishing once again is of significant economic importance to the community.

Bear hunting guides and commercial tour operators from communities in Southeast and other communities outside the region use the Project Area during the hunting and summer tour seasons. Sitka is an important port of call for cruise ships touring the Inside Passage. Approximately 200,000 cruise ship passengers visited the community in 1994. There has been an increase of more than 100% in visitation rates since 1989. The independent visitor segment of the tourism market has also grown rapidly in recent years. In the summer of 1989 a total of 27,940 independent travelers came to Sitka, accounting for 22 percent of total visitation. By 1993 the number of independent travelers had increased to 42,500, or 53 percent of total visitation. Sitka residents visit the Project Area for recreational and subsistence hunting and fishing and for other recreational purposes. The Project Area is considered by many Sitka Residents to be their "back yard."

The modern growth of the wood products industry in Sitka began in the 1950's when the Alaska Lumber and Pulp Company [now Alaska Pulp Corporation (APC)] was awarded a fifty-year timber sale contract with the Forest Service. The company subsequently built and operated a dissolving pulp mill just outside of town, adding 450 high-paying jobs to the local economy. After only 30 years of operation, APC closed the Sitka pulp mill in the fall of 1993. As a result, Sitka's basic economy is once more in a transition period with an increasing dependence on the seafood, tourism, health care, and education industries--most of which have grown or remained stable since 1992. Timber sales from within the Project Area would be available as part of the independent timber sale program or for offering under the Ketchikan Pulp Company (KPC) long-term contract. A number of communities in the region have logging firms that could be employed in timber harvest activity in the Project Area. Several communities have wood processing facilities that would likely use timber provided

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from the Project Area. These include Wrangell, Ketchikan, Metlakatla, and Klawock. Table 3-42 shows the relative strength of different sectors of the Sitka economy today.

Table 3-42
Total Employment and Payroll - Sitka 1994

	Employment	Total Payroll (in millions)	Average Annual Wage
Health Care	610	\$22.6	\$37,049
Education	483	\$15.0	\$31,056
Seafood Industry	667	\$16.5	\$24,738
Seafood Harvesting	400	\$10.0	
Seafood Processing	231	\$5.5	
Aquaculture	36	\$1.0	
Construction	234	\$7.0	\$29,915
Tourism	285	\$7.3	\$25,614
Forest Products	26	\$1.1	\$42,308
Government	647	\$20.1	\$31,066
Wholesale and Retail Trade	653	\$8.3	\$12,710
Transportation, Communication, Utilities	108	\$6.1	\$56,481
Services	418	\$3.1	\$ 7,416
Other Manufacturing	79	\$3.4	\$43,038
Finance, Insurance and Real Estate	77	\$1.9	\$24,675
Miscellaneous	22	\$.2	\$ 9,090
Total	4,409	\$112.5	\$25,516

Source: Sitka Economic Base Study, The McDowell Group, December 1994.

Commercial fishermen harvested over 4 million salmon from waters around the Project Area in 1985 (ADF&G 1993). Table 3-43 shows the combined catch for all gear for chinook, sockeye, coho, pink, and chum salmon in District 113 from 1982 through 1992. District 113 accounts for most of the harvest on salmon returning to streams in the Project Area and includes the following areas:

Sitka Sound	Ushk Bay
Nakwasina Pass	South Arm Hoonah Sound
Nakwasina Sound	North Arm Hoonah Sound
Katlian Bay	Sitkoh Bay
Outer Peril Strait	Outer Salisbury Sound
Hanus	Inner Salisbury Sound
Saook	Lower Peril Strait
Rodman	Deep Bay
Hoonah Sound - Deadman Reach	Fish Bay
St. John Baptist Bay	

Table 3-43

Combined Catch (in numbers of fish) for Troll and Seine Captured Salmon in District 113

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1982	62	89	3,551	243,974	7,021	254,697
1983	103	5,170	2,873	1,125,658	28,258	1,162,062
1984	78	2,022	2,600	844,156	129,986	978,842
1985	747	4,029	8,528	3,860,742	146,298	4,020,344
1986	0	105	307	49,336	72,811	122,559
1987	56	3,751	3,180	235,414	86,418	328,819
1988	0	108	206	4,031	21,630	25,975
1989	5	6,535	2,077	1,012,680	26,747	1,048,044
1990	19	910	138	95,450	22,289	118,806
1991	68	1,522	1,223	358,970	23,144	384,927
1992	11	2,791	1,201	178,756	50,697	233,456

Source: Lorenz 1993.

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Timber Receipts and Payments

As per Federal law, 25 percent of the money collected from the use and sale of National Forest products and services is returned to the state from which those revenues originate. Sources of these funds include receipts from timber sales, purchaser road credits, mining, recreation fees, and special use permit fees. These receipts are dedicated to public schools and roads.

Disbursement of these funds is controlled by each state according to its own laws and regulations. In most states funds are returned to counties in proportion to the receipts generated within each county. In Alaska the distribution method is different. Funds are distributed to organized boroughs in Alaska based on National Forest acreage within each borough. Money is distributed to cities and schools located within National Forests but outside of organized boroughs based on the miles of road each city maintains and the student enrollment in each Regional Education Attendance Area.

Because of the disbursal method Alaska uses, the amount of money a community receives does not depend directly upon the timber or other receipts generated in its borough if an equal value of revenue is produced somewhere else in the same National Forest. There would be a reduction of funds received if no replacement revenue was created.

In the past the total value of funds contributed has not comprised a significant portion of the total public school and public road budgets for the cities and boroughs of Southeast Alaska. Table 3-44 itemizes these payments and also indicates the annual receipts of the Tongass timber program. Table 3-45 lists the payments the City and Borough of Sitka received from 1990 to 1994.

Table 3-44
National Forest Receipts and Payments to the State of Alaska, Fiscal Years 1984 - 1994

Fiscal Year	Tongass Receipts ¹	Payments to Alaska
1984	4,063,189	1,015,797
1985	209,231	52,308
1986	1,967,240	491,810
1987 ²	-2,033,575	---
1988	1,232,672	308,168
1989	20,183,133	5,045,783
1990	35,544,272	8,886,068
1991	36,968,718	9,242,180
1992	13,093,312	3,273,328
1993	15,607,652	3,901,913
1994	35,128,048	8,782,012
Total	161,963,892	39,439,452

Source: USDA Forest Service, Tongass National Forest, R10-MB-149, August 1991. Tongass Land Management Plan Revision, Supplement to the Draft Environmental Impact Statement.

¹ Capital Investments such as permanent roads, bridges, log transfer facilities, and timber stand improvements also contribute to the total assets of the Tongass National Forest, reduce future management costs, and are scheduled to achieve management objectives described in the Tongass Land Management Plan.

² Tongass receipts for fiscal year 1987 were negative as a result of Comptroller General Decision B-224730 of March 31, 1987 to retroactively implement the emergency rate redeterminations for short-term sales. Without the reduction, Tongass receipts would have been positive by \$2,139,943. As a result of the negative receipt, no payments to the State were made in 1987.

Table 3-45
National Forest Payments to the City and Borough of Sitka

Year	
1990	\$975,555.00
1991	\$1,002,372.00
1992	\$355,222.00
1993	\$403,243.00
1994	\$948,804.00
Total	\$3,685,196.00

Source: Morse 1995.

Economic Efficiency of Timber Harvests

The National Forest Management Act of 1976 (NFMA) set forth explicit requirements for economic efficiency analysis of National Forest management proposals. While economic efficiency must be analyzed and considered, it is not the sole decision criterion. Although the Forest Service has generally tried to achieve cost-efficient management (lowest possible input cost per unit of output), systematic evaluation of all costs and benefits from practices and activities has been undertaken only in recent years. (See Chapter 4 Silviculture and Timber Management.)

Social Values

There is considerable public debate about the values of the Tongass National Forest. This is part of a wider debate that is occurring at the national and global level. Increasing public concern about the relative importance of forest values - commodity, amenity and spiritual - has elevated this issue on the political agenda at the regional, national, and international levels. Changing values within society have led to changing expectations concerning the management of public lands.

The paradox is that the social values which we are least able to define and measure are the very ones that appear to be of increasing importance to our society. Resolving the conflict over social values cannot be done simply by creating a better way to give each social value a number ranking. Different people view different things as being more important because of fundamental differences in world view. Thus, different groups in society have different world views, values, and ethical stances. For this reason resolving these differences is best done in the political and social arena.

Many kinds of values are found in forests. Although we cannot measure and compare all of them, there is merit in identifying the many public benefits derived from the Project Area. Some of the social values provided by the forest setting include:

- Commodity values - timber, fish, minerals
- Amenity values - lifestyle, scenery, wildlife
- Environmental quality values - air and water quality
- Ecological services - habitat conservation, biodiversity
- Public use values - gathering, hunting, fishing, subsistence, recreation, tourism
- Spiritual values - sacred places, customary and traditional uses
- Health values - medicines
- Security values - sense of social continuity and heritage

These values, how and in what proportion they should be provided, and who they should be provided for, are at the center of the forest management debate in Southeast Alaska today. As these values play out in a world of change -- changing concepts of what the resources are and their importance, changes in who pays and who benefits, and changing institutions -- the conflict escalates, the decision-making space shrinks, and the risks to people and resources grow.

Lifestyles

Alaska has always been known as a wild and magnificent place, a vast expanse of unique scenery and seemingly limitless natural resources. Alaska is known as "The Last Frontier" (USDA Forest Service 1990). This reputation is clearly appreciated by many of the residents of Southeast Alaska. To many of these people, this region is viewed to be similar to the America of two hundred years ago. The quality of life in Southeast Alaska is also greatly enhanced by, and in many ways dependent on, the physical environment associated with the Tongass National Forest.

Southeast Alaska residents have a diverse set of lifestyles, values, and economic pursuits. Many people choose to live in Southeast Alaska because of the opportunity to participate in the commercial fishing, timber, mining, and recreation industries. Other

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residents desire the lifestyles afforded by remote, uncrowded living situations and the opportunity to be close to their families and friendship networks. Still other people choose to remain in Southeast Alaska because of the hunting, fishing, recreation and subsistence opportunities, and the chance to live in close proximity to a wilderness environment. Many Native American residents remain attached to Southeast Alaska because it provides an important link in the practice of traditional customs and in the preservation of their cultural heritage.

Many Southeast Alaska residents want to keep that which makes their part of the world unique. At the same time, they also want to maintain their economic livelihood (USDA Forest Service 1990). With a limited resource base, resolution of this conflict between quality of life and economic security has become increasingly difficult. The great diversity of attitudes, beliefs, values, and lifestyles suggests that the proposed Project would affect the population of Southeast Alaska in both positive and negative ways.

Proposals for logging in areas close to Sitka have raised local interest, sentiment, and debate about what mix of values the forest should provide. Although it appears that many in the community support a small timber industry to diversify the economy of Sitka, there is also considerable opposition to clearcut logging in areas considered to be in Sitka's "back yard." Most of the Project Area appears to lie within that area of concern. At the heart of the debate is a sincere and strong desire on the part of most Sitka residents to maintain the type of lifestyle which they presently have.

Chapter 4 - Environmental Consequences

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Chapter 4

Environmental Consequences

In this chapter we describe the effects on the environment of the five alternatives presented in Chapter 2. We have organized this chapter by resource, in the same order they were discussed in Chapter 3.

Direct effects happen at the same time and place as the initial cause or action.

Indirect effects occur later, or are spatially removed from the activity.

Cumulative effects are the effects of actions when added to other past, present, and reasonably foreseeable future actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

Environmental consequences are the effects of implementing an alternative on the physical, biological, social, and economic environment. The significant or potentially significant environmental consequences are disclosed, including the direct, indirect, and cumulative effects. These effects may have consequences that are both beneficial and detrimental. Effects are quantified where possible, although qualitative discussions are often necessary.

For the purposes of this document, we have identified a time period over which the direct effects are expected to occur. This time period is between the expected initiation of logging activities in early 1997 and the expected completion of those activities in 2002. By comparison, indirect effects may occur immediately or they may be delayed. Indirect effects are determined based on a “reasonably foreseeable future.” Cumulative effects are also based on a reasonably foreseeable future and include past and present actions. As a result, we have identified for this document a time period that we believe satisfies the requirements of reasonably foreseeable. This time period is between the release of this EIS and the year 2008. It reflects a “reasonably foreseeable future” for which we can project both actions and effects. The year 2008 is the estimated completion date for all planned timber sales identified in the current Chatham Area Timber Sale Planning Schedule.

The cumulative effects analysis in this document tiers to the current Tongass Land Management Plan (TLMP) EIS and subsequent amendments (USDA Forest Service 1970, 1986, 1991) and incorporates by reference analysis contained in the Supplement to the Draft EIS for the TLMP Revision (USDA Forest Service 1991d) and its Planning Record. As a result, the projected cumulative effects include what may be expected under the management direction provided by the TLMP. The decisions made in the Forest Plan provide long-range direction for management of the Tongass National Forest for the duration of the plan.

The following assumptions were made to assess reasonably foreseeable effects. These assumptions reflect current management/technology of National Forests and provide a uniform approach to estimating effects of timber harvest and road construction.

- Laws, guidelines, and Best Management Practices (BMPs) for resource protection

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would be followed. These requirements are expected to be at least as stringent in the future as they are today.

- Timber sale planning would occur in an interdisciplinary fashion.
- All acres of suitable commercial forest land are equally subject to impacts, i.e., timber harvest can occur anywhere on suitable commercial forest land.
- The No-Action Alternative would represent only a delay in implementing the TLMP and, based on volume projections, this Project Area would be revisited in approximately 10 years.
- Future effects on resources from timber harvest and road construction will be similar to impacts projected for current alternatives.

The cumulative effects analysis for the Northwest Baranof Project includes the large scale logging that has taken place since 1956 when the Forest Service entered into the 50-year contract with APC. It also considers actions undertaken or planned as a result of RODs for the Kelp Bay, Southeast Chichagof, and Ushk Bay timber sale projects that have been completed in recent years.

Furthermore, the current timber sale schedule calls for additional timber sale planning in the Sitka area with a decision scheduled for 2001 and logging scheduled through 2007. Although this timber sale planning is scheduled, we don't know if any additional timber harvest will actually occur in the reasonably foreseeable future. As a result, no future harvest is projected for the cumulative effects analysis.

Chapter 4 concludes with other environmental considerations that must be addressed under the National Environmental Policy Act (NEPA) but do not fall under the categories discussed in Chapter 3. These topics include unavoidable adverse environmental effects, the relationship between short-term uses and the maintenance and enhancement of long-term productivity, the irreversible and irretrievable commitments of resources, possible conflicts between the proposed action and the plans of other jurisdictions, and other environmental considerations.

We can reduce or mitigate many adverse effects by limiting the extent or duration of effects. We have specified mitigation measures for project activities to be implemented under the alternatives within standards and guidelines. Throughout this chapter we briefly discuss mitigation measures, and we discuss them in detail in Appendix A.

Physical and Biological Environment

Geology and Soils

Geology

Implementation of any one of the action alternatives will have limited or no direct or indirect effect on the minerals and geology resources within the Project Area. There would be no effect to the locatable mineral resources because there are no known or suspected deposits in the area and the potential for their occurrence is considered low based on USGS information and reports.

Rock

Road construction or reconstruction, as well as the construction of log transfer facilities (LTFs), will require from 288,000 to 768,000 cubic yards of fill and shot rock, necessitating the development of rock quarries. For cost effectiveness of road construction, rock quarries should be located no more than three miles apart. The TLMP identifies in-service needs of between 12,500 and 15,000 cubic yards of common-variety minerals to construct each mile of road for timber harvest purposes, and approximately 12,000 cubic yards for each LTF. The effect of each alternative on the salable mineral resources is summarized in Table 4-1. Irreversible effects to the forest are caused by taking the land developed for rock quarries out of the timber production base by removing the top soil. Table 4-1 displays acres of land taken out of timber production by alternative.

Table 4-1
Summary of Fill and Shot Rock Needs

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5 No Action
Estimated Cubic Yards of Rock Needed					
New Construction	296,000	260,000	149,000	487,000	0
Reconstruction	96,000	114,000	57,000	107,000	0
Temp. Road Construction	120,000	98,000	82,000	174,000	0
Total Cu. Yards of Rock	512,000	472,000	288,000	768,000	0
Acres of Rock Quarries	16	14	9	23	0

Source: Baer 1995.

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Caves

Since we did not locate any caves or know that any exist within the Project Area, we do not expect any direct, indirect, or cumulative effect on these resources. The limestone deposits and sinkholes we found in the Project Area are within an area deferred from harvest. No activity is proposed at this time in any alternative within 2.2 miles of this limestone deposit.

Soils

The greatest impact to the soil resource from implementation of the action alternatives displayed in the Northwest Baranof EIS will occur as soil erosion. Soil displacement and removal of soil from the forest land base by dedicating this land to roads, landings, borrow pits, and administrative sites will also be an impact. Other types of soil disturbance (soil compaction and reduced permeability) may occur but are of limited extent and will have minor impacts on the soil resource. The degree of soil disturbance varies between VCUs because of watershed characteristics, and between action alternatives because of differences in selected harvest units.

Regardless of which action alternative is selected, road construction and logging will cause an increase in sediment production over unmanaged natural conditions and a reduction in long-term soil productivity. Soil productivity will be sacrificed in areas dedicated to roads, landings, and borrow sites. Soils can be damaged by compaction or displacement from management activities and by particulate erosion or mass movement following those activities.

Soil erosion resulting from soil mass wasting (landslides) is a factor in natural alteration of the forest landscape of Southeast Alaska. Impacts from timber harvest and road construction increase potential for soil mass movement over that of natural conditions.

Road construction is one of the greatest contributors to management induced sediment production. Road failures, improper drainage, and erosion of the road surface and cut-and-fill slopes all contribute to sediment production. After a period of time, the majority of erodible soil material from the road surface will have been removed, the cutbanks and fillslopes will become vegetated, and surface erosion will decrease. Road maintenance and the proper closeout of roads will help prevent road failures.

Timber harvest will also contribute to sediment production. Surface erosion will increase if yarding activities expose the mineral soil by removing the organic mat. Landslides may be triggered by clearcutting. Interlocking tree root systems decompose over a period of five to seven years, resulting in a loss of slope stability after harvest. Sites with a high mass-movement hazard may experience up to five times the mass wasting experienced on the same soil under natural forest conditions (Swanston 1989). Slope failures may occur in increasing numbers from three to seven years after timber harvest and then taper off to near stable conditions within fifteen years, after which the site can be said to be "reclaimed" from management-induced mass wasting. In most cases, slope stability will have returned to normal.

All harvest prescriptions open the forest to the forces of wind and any resulting windthrow would disturb the surface mantle. This would increase surface erosion and on steep slopes could act as a triggering device for debris avalanches and debris flows.

Many of the harvest units are planned for group selection or overstory removal to mitigate various resource concerns. For the purpose of this analysis, however, the values for total acres of high hazard soils harvested (Table 4-2) are based on the entire area of the units. This was necessary because the portions of the units which will not be cut will not be determined until unit layout. As such, the acreage totals shown in this report are higher than what would actually be cut and impacted under any of the action alternatives. The values displayed can still be used to compare the alternatives, however, because the harvest method for the individual units will not change between alternatives.

Direct Effects

Total miles of road construction provide a means of comparing the amount of disturbance caused by roading and are an indicator of productivity loss. There is greater mineral soil disturbance as a result of road building activities than from timber harvest operations. Road disturbances are concentrated along a corridor which remains disturbed for a longer period of time. Roads constructed on high hazard soils will experience more mass wasting than those constructed on less hazardous soil. The effects from roads which influence the soil resource are sediment production and loss of productive soil.

Table 4-2 displays the acreage of high hazard soils that are found within proposed harvest units and roads for each alternative. The unit acreages shown do not represent the number of acres that will develop problems since only small, isolated slides scattered throughout these hazardous areas would be expected to occur. Road acres are calculated as the portion of land within 25 feet of the centerline of each road. These values provide a relative method of comparing alternatives.

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Table 4-2
Acres of Proposed Units and Roads in High Soil Mass Movement Class (MMHaz3), by Action Alternative and VCU

VCU	Alt. 1		Alt. 2		Alt. 3		Alt. 4	
	Units	Roads	Units	Roads	Units	Roads	Units	Roads
287	42	1	0	0	42	1	42	1
288	215	1	0	0	222	1	222	1
289	0	0	76	0	76	0	76	0
290	0	0	0	0	0	0	0	0
291	103	0	217	0	217	0	217	0
292	126	4	547	5	458	6	549	9
299	52	0	0	0	0	0	52	0
300	110	0	96	1	0	0	164	1
301	100	0	142	0	0	0	142	0
302	81	1	153	2	0	0	153	2
Total	829	7	1,231	8	1,014	8	1,617	14

Source: Huecker 1995

Cumulative Effects

Tree roots, which contribute to the strength of the soil, deteriorate within five to seven years after the trees have been cut. With the loss of the interlocking network of roots, the likelihood of landslides increases. Nevertheless, past impacted, high hazard soils will have an effect on the amount of sediment produced and delivered to streams. Therefore, acres of units and roads in high mass-movement hazard soils are reported cumulatively through the proposed entry (Table 4-3). This provides a relative measure of possible effects for each alternative and for comparing the amount of soil that has a high potential for disturbance from harvest activities.

Impacts from timber management activities on soils include loss of productive growing sites from roads, landings, and borrow pits. Impacts also include impaired soil productivity for vegetative growth resulting from landslides and from scarification and erosion after timber harvest.

Table 4-3
Cumulative Acres of Units and Roads in High Soil Mass Movement Class (MMHaz3) for
Past* and Proposed Harvest, by Alternative and VCU

VCU	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5 No Action
287	405	362	402	405	362
288	216	0	223	223	0
289	0	76	77	76	0
290	0	0	0	0	0
291	386	500	500	500	283
292	1,556	1,978	1,876	1,984	1,426
299	359	307	310	359	307
300	630	617	512	685	520
301	472	514	369	514	372
302	653	727	547	727	572
Total	4,677	5,080	4,816	5,473	3,841

Source: Huecker 1995. * Includes 158 acres in MMHaz4 from previous harvest and road construction. No additional harvest or road construction are proposed in MMHaz4 soils.

Vegetation

Old-Growth Forests

The action alternatives would harvest between 1,672 and 3,078 acres of old-growth forest. This acreage would be converted from old-growth forest to successive stands of primarily younger trees which would likely be harvested before they mature into old-growth forest. Silvicultural prescriptions including overstory removal and seed tree cut will retain certain attributes of old-growth forest as described in the Harvest Methods section in Chapter 2. Snags, down wood, and some larger trees will be retained where possible. The No Action Alternative (Alternative 5) maintains approximately 81 percent of the old growth acres that existed in 1954. The action alternatives retain between 76 and 78 percent of the 1954 old growth acres. This equates to a range of 94 to 97 percent of current old growth acres.

Table 4-4 indicates acres of old growth that remain by VCU. All alternatives provide sufficient acres to meet current TLMP direction for retention of old growth.

Table 4-4
Projected Acres of Remaining Old Growth through 2008

VCU	Acres in 1954	TLMP Retention Acres*	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5 No Action
287	15,175	1,121	13,513	13,582	13,507	13,506	13,584
288	2,245	84	1,946	2,245	1,943	1,943	2,245
289	3,288	296	3,008	2,947	2,947	2,947	3,009
290	1,736	235	1,587	1,587	1,587	1,587	1,587
291	7,645	293	5,502	5,293	5,297	5,292	5,710
292	12,581	446	8,299	7,589	7,702	7,522	8,607
299	4,600	194	2,801	2,889	2,889	2,801	2,889
300	6,259	2,156	4,884	5,030	5,167	4,831	5,167
301	3,192	234	2,255	2,183	2,405	2,181	2,405
302	7,137	2,199	6,184	5,964	6,448	5,963	6,448
Total	63,858	7,178	49,979	49,309	49,892	48,573	51,651
Percent of 1954 Acres Remaining			78%	77%	78%	76%	81%
Percent of Current Acres Remaining			97%	95%	97%	94%	100%

Source: Hartmann 1995. *Acres designated in the TLMP to be retained.

Floodplains, Wetlands, and Riparian Areas

Floodplains

The numerous streams in the Project Area make it impossible to avoid all floodplains during timber-harvest-related activities. Environmental effects on floodplains from the alternatives are generally limited to road construction. The small area of floodplains proposed for actual timber harvest would not affect flooding or erosion.

During road construction, both direct and indirect impacts to floodplains can occur. There may be no detectable influence, or there can be flow alteration in minor streams because of routing by roadside ditches and culverts. Channel and flow alteration can locally affect the velocity of the flows, width and depth of water, and the location of flow. Such factors can result in different erosion and sediment transport characteristics.

The Forest Services uses BMPs (USDA FSH 2509.22) to minimize impacts on floodplains as well as to protect roads and drainage structures. Examples of such practices include designing bridges and culverts to handle the expected flows, and installing frequent cross drains or ditch relief culverts to minimize erosion from large concentrations of water.

Logging activities are controlled to minimize damage to stream banks and bottoms from yarding. Existing large woody debris (LWD) in streams contributes to stream stability and moderation of flow energy and velocity. This LWD is generally left in place. In cases where LWD upstream of bridges or culverts could move and block stream flow, it might be removed to ensure the passage of high flows without causing diversions and erosion.

None of the proposed alternatives would result in human occupancy of floodplains. Because the proposed action would have no floodplain development other than stream crossings, there would be no loss to property values from the proposed actions, nor would human health, safety, or welfare be adversely affected.

Because of the limited changes expected in floodplains as well as the naturally high amounts of precipitation and runoff conditions, the risk characteristics related to flooding would not change significantly as a result of activities performed under each of the alternatives. In general, road location, construction measures, and drainage structures will have negligible impact on the natural and beneficial uses of floodplains in the Project Area.

Wetlands

Timber harvest will have some impact on wetlands, and road construction in wetlands cannot always be avoided. The total acreage of wetlands harvested and roaded by alternative is displayed in Table 4-5. Impacts may range from none, to altering the soil moisture regime, puddling, compaction, and to a smaller extent, to soil displacement and erosion. Wetlands are seldom affected to an extent that prevents them from maintaining their wetland characteristics. Harvest of forested wetlands may, however, temporarily alter the hydrology of the site until vegetation is reestablished. Forested wetlands will regenerate timber species after harvest, but at a slower rate than on non-wetland sites.

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Table 4-5

Acres of Proposed Units and Roads in Wetlands, by Action Alternative and VCU

VCU	Unit Acres				Road Acres			
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 1	Alt. 2	Alt. 3	Alt. 4
287	6	0	6	6	3	0	3	3
288	54	0	55	55	18	0	18	18
289	0	5	5	5	0	0	0	2
290	0	0	0	0	0	0	0	0
291	79	125	125	125	0	0	0	2
292	352	176	141	202	9	7	9	17
299	10	0	0	10	0	0	0	0
300	41	2	0	42	5	8	0	14
301	142	1	0	1	0	0	0	0
302	111	195	0	195	10	10	0	10
Total	796	504	332	642	44	25	30	65

Source: Huecker 1995.

Although wetland loss may occur through road construction, the techniques and measures required during road construction and those used to provide long service life on roads generally preserve the natural values and functions of the affected wetlands. These techniques and measures include the use of permeable subgrade materials to avoid restricting the natural movement of water. They also include the frequent placement of culverts to allow water to pass freely.

Table 4-5a

Cumulative Wetland Acres Impacted by Units and Roads by Alternative

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
Previously Affected Wetland Acres	1,172	1,172	1,172	1,172	1,172
Proposed Wetland Acres in Units and Roads	840	529	362	707	0
Total Wetland Acres Affected	2,012	1,701	1,534	1,879	1,172
Percent of Total Wetland Acres	4%	3%	3%	3%	2%

Source: Huecker 1995.

There are 53,948 acres of wetlands within the Project Area. Implementation of Alternative 1 would result in the greatest disturbance to wetlands (840 acres total). This equates to an impact on 1.5 percent of the current wetland acreage in the Project Area.

Estuaries

Estuaries provide sheltered rearing areas for pink, chum and coho salmon. Direct impacts to estuaries may occur from LTF construction and use. Indirect impacts to estuaries may occur from upland activities (such as timber harvest and road construction) that effect water quality and sedimentation. All estuaries in the Project Area experience a naturally occurring flush of sediment each fall; sediment accumulates in the stream during the summer and is washed downstream by fall rain storms. We display estimated impacts to estuaries in each alternative in Table 4-6. Proposed LTF locations are displayed for each alternative on the enclosed maps.

We propose using a barge-loading LTF at St. John Baptist Bay. This would limit direct effects on the estuary to those caused by road runoff and incidental spillage. Overall, the barge facility would protect an area valuable to juvenile sablefish and other aquatic species.

Schools of pink and chum salmon may feed up to two months in estuaries prior to heading seaward or migrating along shorelines (Heard 1991). Salo (1991) reported that chinook salmon are the only species more dependent on estuaries than chum salmon. There have not been significant increases or decreases in chum salmon escapement in the Project Area from 1960 to 1993 (Halupka et al. 1994).

Bark accumulation at LTF sites may reduce the biotic productivity in an estuary. In large estuaries, the importance of this loss is diminished because the percentage of unaffected area is large compared to the amount lost. In a small estuary (or in a bight or cove within a large estuary), the loss of productivity may cause deterioration in the remaining areas, at least temporarily (Schultz and Berg 1976).

Marine life forms are directly affected by coverage of bark or by rock fill; this displaces natural habitat. Some species, primarily mobile species, appear not to be affected by debris. Bark sloughed during transfer and storage can accumulate, covering and smothering bottom habitat and those organisms attached to the bottom. There are indications that water quality around or in bark accumulations is also affected to varying degrees. The amount of dilution or flushing is the main factor determining environmental effects near transfer or storage sites (Faris and Vaughan 1985). The significance of this source of water pollution depends on the quantity and types of logs stored, the duration of storage, and the character and flow of water at the transfer site (Schaumberg 1970). Toxic substances, occurring as leachates from bark, precipitate in salt water; however, leachates do not appear to be a major problem in open water or where good circulation exists (Sedell and Duval 1985).

In general, areas within estuaries are more sensitive to disturbance from LTFs than those areas located on marine systems. Species diversity is an indication of habitat quality. LTFs located in areas with higher numbers of species generally exhibit higher value

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habitat than those with lower numbers of species present (Schultz and Berg 1976). Underwater dive reports conducted at the LTF sites (Appendix E) identify the species found at the time of the dive and their abundance. Flow and dispersement rates were also observed and recorded in the dive reports.

Each of the estuaries affected are larger than 50 acres and would have the ability to absorb the scale of impact which might result from the LTFs proposed in each alternative. At each of the proposed LTF locations, the percentage of estuarine bottom habitat subject to direct effects would be less than 1.5 percent (Table 4-6). Table 4-7 displays the estimated percent of estuary affected by bark and rock fill for each alternative.

Table 4-6
LTF Estimated Direct Effects to the Estuarine Marine System

VCU	LTF Name	Est. Fill Acres	Impact Bark Acres	Estuary Acres	Percent Estuary Impacted
287	Schulze Cove	0.2	1.0	0	0.00
292	Rodman Bay	0.2	1.3	186	0.81
292	Rodman Bay NE	0.2	0.9	0	0.00
293	Appleton Cove	0.0	0.0	507	0.00
299	Noxon Creek	0.2	0.5	193	0.36
300	Nakwasina Passage	0.2	0.5	86	0.81
301	Lisa Creek	0.2	0.5	55*	1.27
301	Lisa Creek N	0.2	0.5	55*	1.27
302	St. John Baptist	0.1	0.0	71*	0.14
302	St. John Baptist S.	0.5	0.0	71*	0.70
	Total	1.9	5.2	1,098	0.65

* Duplicate acres. These acres were only counted once toward total acres. Source: Allio 1995.

Table 4-7
Impact of Fill and Bark on LTF Sites by Action Alternative

	Alt. 1	Alt. 2	Alt. 3	Alt. 4
No. of LTF Sites	6	4	3	7
% Estuary Impacted	0.6	0.3	0.8	0.7

Source: Allio 1995.

Riparian Areas

Riparian areas are a transitional zone between a freshwater aquatic ecosystem and the adjacent terrestrial ecosystem. The NFMA regulations direct that special attention shall be given to land and vegetation for approximately 100 feet from the edges of all perennial streams, lakes, and other bodies of water. This area shall correspond to at least that of the recognizable area dominated by the riparian vegetation (Section (e) of 36 CFR 219.27). BMP 12.6 in the Soil and Water Conservation Handbook requires riparian areas to be managed for the primary purposes of protecting or enhancing water quality and fisheries habitat.

Table 4-8 displays miles of existing road, proposed miles of road to be reconstructed, and proposed miles of new road construction in riparian habitat for each VCU by alternative. Of the action alternatives, Alternative 3 proposes the least amount of road construction or reconstruction in riparian habitat. However, there is little difference between any of the action alternatives.

Table 4-8
Miles of Existing and Proposed Roads in Riparian Areas (by VCU and Action Alternative)*

VCU	Existing Riparian Roads (miles)	Proposed Reconstruction (Miles in Riparian Areas)				Proposed New Construction (Miles in Riparian Areas)			
		Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 1	Alt. 2	Alt. 3	Alt. 4
287	6.2	0	0	0	0	0	0	0	0
291	9.9	2.2	4.8	4.8	4.8	0	0	0	0
292	21.0	3.3	3.3	3.3	3.3	0.1	0.1	0.1	0.1
299	7.6	0	0	0	0	0	0	0	0
300	6.1	2.2	0	0	2.7	0.1	0	0	0.1
301	2.2	0.1	0.5	0	0.1	0.3	0	0	0.3
302	2.0	0.8	0.8	0	1.0	0	0	0	0
Total	55.0	8.6	9.4	8.1	11.9	0.5	0.1	0.1	0.5

Source: Lorenz 1995. *VCUs with no existing or proposed roads in riparian areas are not listed in this table.

Table 4-9 displays the acres of proposed harvest units in riparian habitat for each VCU by alternative. There is very little difference between the alternatives in the amount of riparian habitat that would be harvested. Much of the riparian habitat (10.3 acres) is within a single proposed unit, Unit 3143, which is in a watershed that flows into Rodman Bay. Unit 3143 is proposed for overstory removal (70% of the stand volume) by helicopter, which will help to minimize impacts to the riparian area. The unit is proposed for harvest in Alternatives 2, 3, and 4. Cumulative effects on Riparian Areas are displayed in the Wildlife section, Table 4-32.

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Table 4-9
Proposed Harvest Acres in Riparian Areas (by VCU and Action Alternative)

VCU	Alt. 1	Alt. 2	Alt. 3	Alt. 4
291	6.3	12.6	6.7	12.6
292	10.3	10.3	10.3	10.3
300	0.4	0	0	0.4
301	1.8	1.8	0	1.8
Total Acres Riparian Harvest	18.8	24.7	17.0	25.1

Source: Lorenz 1995.

Fish and Water

Fish

Minimum 100 foot buffer zones are provided on both banks of all fish streams, measured at "bank full" or flood stage water level. This is usually much more than 100 feet from the normal creek edge.

Fish resources in the Project Area are important to subsistence, recreation, and commercial users. Guidance for protecting fish resources is provided by:

- the National Forest Management Act (NFMA) regulations, in 36 CFR 219.27 (e);
- the Region 10 Aquatic Habitat Management Handbook (FSH 2609.24), June 1986;
- the Tongass Timber Reform Act (TTRA); and
- the Region 10 Soil and Water Conservation Handbook (FSH 2509.22).

BMPs and the use of buffer zones are likely to assure protection of riparian and potential fish habitat. On the Sitka Ranger District, fisheries biologists search every unit with potential fish habitat and protect potential fish habitat with a minimum 100-foot (horizontal measure) buffer on each stream bank, regardless of size, streamflow, or presence of fish at the time of the survey.

With the protection provided by these measures, the primary impacts to fish habitat and water quality are from:

- unplanned events such as soil mass wasting, or large scale blowdown;
- roading through wetlands, streams or riparian areas;
- sediment from roads;
- short term changes in the magnitude and frequency of stream discharge due to timber harvest; and
- short term changes in the magnitude and frequency of stream discharge due to interception of groundwater flows by road cuts, and by consolidation and redirection of flows by road drainage structures.

Habitat Capability

Channel types form the basic framework for fish habitat capability models for the Tongass National Forest. Within channel types, differences in population densities of coho salmon and Dolly Varden char are primarily a function of large woody debris (LWD) and percentage of pool habitat. Average population density estimates for coho and Dolly Varden by channel type across the Tongass are used as coefficients in the habitat capability models. Under all action alternatives, LWD and pool habitat would be impacted by the roads at stream crossings. There would be secondary impacts from LWD washed in from Class III channels. With the application of BMPs and TTRA buffer strips, we do not expect any quantifiable effects on coho salmon or Dolly Varden char in any alternative.

Pink salmon habitat capability models are based on potential survival of eggs and emerging fry in the spawning gravels. Researchers have linked survival to water quality criteria including intragravel sediment, water flow, and temperature. As with coho salmon and Dolly Varden char, application of BMPs and TTRA buffer strips should keep sediment delivery within acceptable levels for all action alternatives.

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Unplanned impacts to water quality and fish habitat may occur. These impacts may include landslides, blowdown of leave strips, use of construction materials which break down at a rapid rate, washout of bridges or culverts, and failure of bridges or culverts to pass fish where planned. The risk of unplanned impacts is not quantifiable and increases with any development, including increased timber harvest and road construction. Alternatives affecting greater proportions of high hazard soils have the potential for increased sediment delivery to fish streams.

We use the number of stream crossings and the total acres of units and roads within riparian areas to display a comparison of potential impacts to fisheries and water quality. Roads constructed within the riparian area can constrict the floodplain and channel resulting in changes in channel shape and associated habitat. Many small, individually subtle impacts can accumulate into significant impacts. Table 4-10 displays the number of fish stream crossings in each VCU by alternative. We did not include VCUs 287, 290, and 299 in the table because no stream crossings are planned in these VCUs in any alternative.

Table 4-10
Fish Stream Crossings by Action Alternative

VCU	Alternative 1 Crossings		Alternative 2 Crossings		Alternative 3 Crossings		Alternative 4 Crossings	
	Class I	Class II	Class I	Class II	Class I	Class II	Class I	Class II
288	1	0	0	0	1	0	1	0
291	13	0	26	0	26	0	26	0
292	9	1	9	1	9	1	9	1
300	10	1	0	0	0	0	10	1
301	3	1	1	1	0	0	1	1
302	3	10	6	13	0	0	6	13
Total	39	13	42	15	36	1	53	16

Source: Lorenz field review, 1995.

Water

Increased stream sedimentation in the Project Area is likely to result from timber harvest and road construction on soils with high landslide risk. Sediment will also be generated by road construction in riparian areas and from erosion of drainage facilities of long term forest roads. However, the overall effects on beneficial use of water resources within the Project Area should be negligible. The ratings for mass wasting potential risks are given below.

The potential risk of sediment transfer from mass wasting events associated with harvest and roads was analyzed for each VCU and drainage basin using an approach similar to that described by Hogan (1989). The analysis reports the acreage of roads and harvest

units with high sediment delivery potential to Class I anadromous fish streams. Sediment delivery to Class I streams is broken down into two separate categories: direct delivery to Class I streams and indirect delivery to Class I streams from Class II or III tributaries. Potential for direct and indirect sediment delivery is shown by alternative in Table 4-11 for harvest units, and Table 4-12 for proposed roads.

Table 4-11
Acres of Harvest Units on High Hazard Soil (MMHaz3) with Direct or Indirect Sediment Delivery Potential by Action Alternative

VCU	Alternative 1		Alternative 2		Alternative 3		Alternative 4	
	Direct	Indirect	Direct	Indirect	Direct	Indirect	Direct	Indirect
287	0	0	0	0	0	0	0	0
288	162	46	162	46	162	46	162	46
289	0	0	0	0	0	0	0	0
290	0	0	0	0	0	0	0	0
291	0	67	104	73	104	73	104	73
292	69	15	69	58	69	58	69	58
299	27	14	27	14	0	0	27	14
300	57	44	58	54	0	0	74	88
301	43	60	44	98	0	0	44	98
302	27	10	27	10	0	0	27	10
Subtotal	385	256	491	353	335	177	507	388
Total	641		844		512		895	

Source: Kelliher 1995.

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Table 4-12

Acres of Proposed Road Construction on High Hazard Soil (MMHaz3) with Direct or Indirect Sediment Delivery Potential by Action Alternative

VCU	Alternative 1		Alternative 2		Alternative 3		Alternative 4	
	Direct	Indirect	Direct	Indirect	Direct	Indirect	Direct	Indirect
287	0	0	0	0	0	0	0	0
288	4.8	16.8	0	0	4.8	16.8	4.8	16.8
289	0	0	0	0	0	0	0	0
290	0	0	0	0	0	0	0	0
291	0	0	0	0	0	0	0	0
292	4.8	0	3.6	0	4.8	0	4.8	0
299	2.4	1.2	0	0	0	0	0	1.2
300	5.4	1.8	4.8	2.4	0	0	6.6	2.4
301	2.4	0	2.4	0	0	0	2.4	0
302	8.4	7.2	6.0	9.0	0	0	7.2	10.8
Subtotal	28.2	27.0	16.8	11.4	6.4	16.8	25.8	31.2
Total	55.2		28.2		26.4		57.0	

Source: Kelliher 1995.

Results of this mass wasting risk assessment for units in the Northwest Baranof Project indicate that Alternative 3 has the lowest overall risk of sediment delivery to streams, and Alternative 4 has the highest potential risk. The situation is similar for road impacts. Alternative 3 has the lowest potential impact and Alternative 4 has the highest.

Critical stream crossings were identified from channel type inventory information. A critical crossing has a higher risk of failure than a noncritical crossing due to high bedload, debris transport, or mass wasting potential of the stream channel being crossed. See table 4-13.

Through the IDT process, "critical" crossings were identified and addressed in the road cards (Appendix O). The long-term effects of road drainage system failure on water quality should be minor if road maintenance BMPs are implemented. BMPs will be prescribed for each of the critical crossings based on site specific needs during timber sale layout.

Table 4-13
Critical Stream Crossings in Each VCU by Action Alternative

VCU	Alternative 1		Alternative 2		Alternative 3		Alternative 4	
	Total	Critical	Total	Critical	Total	Critical	Total	Critical
287	0	0	0	0	0	0	0	0
288	6	0	0	0	6	0	6	0
289	0	0	0	0	0	0	0	0
290	0	0	0	0	0	0	0	0
291	3	3	10	7	10	7	10	7
292	6	2	6	2	6	2	7	3
299	0	0	0	0	0	0	0	0
300	9	5	7	0	0	0	16	6
301	2	0	3	0	0	0	2	0
302	12	0	15	0	0	0	16	0
Total	38	10	41	9	22	9	57	16

Source: Kelliher 1995.

Overall, Alternative 4 rated highest for potential sediment delivery because it had the highest mass wasting potential from critical stream crossings and harvest units and the second highest risk for road induced sediment. Alternative 1 was rated second overall due to having the second highest risk from road mass wasting and critical stream crossings. Road erosion is weighted more heavily than unit erosion. Road ditch lines transport sediment generated by cut banks and road grading to the stream network for the operating life of the road. Mass wasting sediment from harvest units is infrequently transported to the stream network and is given less weight in the rating (Swanston and Marion 1992).

We do not expect any measurable changes in stream temperature, dissolved oxygen, or stream nutrient cycles as a result of timber harvest activities planned in Northwest Baranof watersheds. Riparian management prescriptions should minimize water quality and fish habitat concerns associated with these issues.

We based cumulative watershed effects related to streamflow on total percent of the watershed harvested by alternative, including past harvest. Only VCUs 291 and 292 are sensitive to minor changes in stream runoff as a result of cumulative harvest in Alternatives 2, 3 and 4. Cumulative effects of soil erosion and sediment delivery will come more from roading than timber harvest. Roads have a higher mass-movement hazard and are a continuous source of fine sediment.

Wildlife

Direct and Indirect Effects

Wildlife Habitat

In Chapter 3, we described wildlife habitats (beach fringe, estuary fringe, riparian, old growth, second growth and alpine/subalpine). Each action alternative includes timber harvest within wildlife habitat. We will significantly reduce effects by application of unit design criteria, BMPs (FSH 2509.22, 1991), and legislated protective measures such as TTRA. There will be no harvest in the alpine/subalpine habitats.

Table 4-14 displays the number of acres and percent change in each habitat by action alternatives.

Table 4-14
Acres of Affected Wildlife Habitats in Proposed Harvest Units and Roads by Action Alternative

Habitat Type	Existing Acres	Alt. 1		Alt. 2		Alt. 3		Alt. 4	
		Units & Roads	% Change	Units & Roads	% Change	Units & Roads	% Change	Units & Roads	% Change
Beach Fringe	3,211	4	-0.1	3	-0.1	3	-0.1	7	-0.2
Estuary Fringe	3,871	22	-0.6	18	-0.5	7	-0.2	21	-0.5
Riparian	8,742	74	-0.8	83	-1.0	67	-0.8	100	-1.2
Old Growth	51,651	1,672	-3.2	2,342	-4.5	1,752	-3.4	3,078	-6.0
Second Growth	10,070	58	-0.6	63	-0.6	48	-0.5	84	-0.8
Alpine/ Subalpine	30,604	0	0	0	0	0	0	0	0

Roads include new and reconstructed roads. Source: Hartmann 1995.

Patch Old-Growth Forest Distribution

An analysis of patch old growth was performed for each of the action alternatives. The analysis showed increased edge and decreased patch and core size frequency. See Appendix H for maps of the spacial distribution of patch old-growth habitats for the Project Area by alternative. Figure 4-1 displays the frequency distribution for 1956, 1994 and the action alternatives.

Figure 4-1

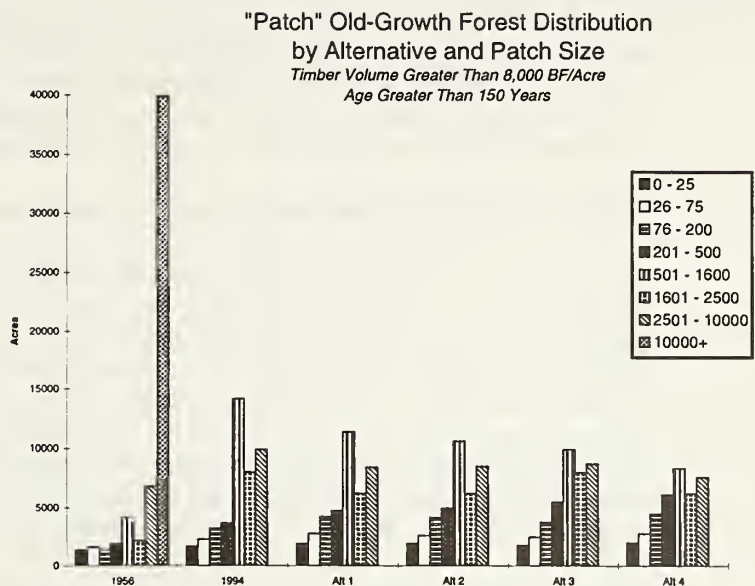
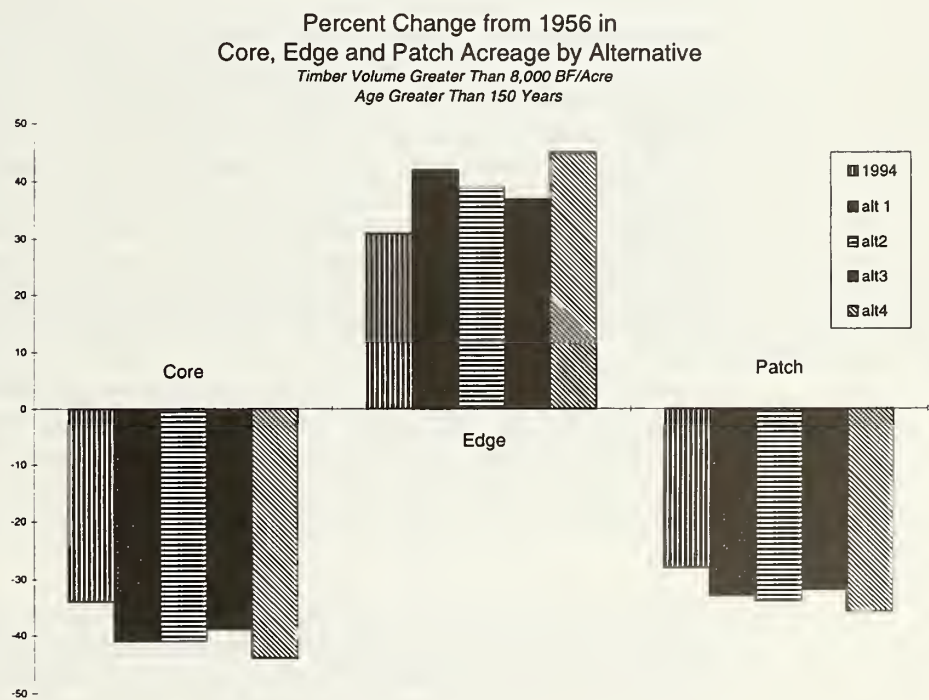


Figure 4-2 displays the percent change in core, edge and patch old-growth habitats for 1956, 1994 and the action alternatives.

Figure 4-2



4 Environmental Consequences

Management Indicator Species and Habitat Capability

Changes in habitat brought about by timber harvest and road construction in each of the alternatives could effect the habitat capability of the Management Indicator Species. As discussed in Chapter 3, "Habitat Capability Models" were used to estimate the ability of a habitat to support Management Indicator Species populations by alternative. (See discussion in Chapter 3 for limitations and use of habitat capability models.)

Habitat Capability Models and Silvicultural Prescriptions

Since the mid-1900s clearcutting has been the primary harvest method used in Southeast Alaska. Therefore, few studies have been done in Southeast Alaska on the effects to wildlife of using harvest methods other than clearcutting. One recent study of the effects of overstory removal (20 percent and 40 percent of basal area removed) on subsequent deer use, conifer regeneration, blowdown, and logging damage has presented some interesting results (Doerr 1995). The study shows that removal of timber has increased deer use, especially in the 40 percent harvest area. This study also recommends that additional timber harvests which use overstory removal should be undertaken with appropriate research, study, and monitoring of effects.

Because we lack information on effects of alternative harvest methods on wildlife, we give harvested areas the same habitat capability value regardless of the harvest method proposed (i.e., the effects of clearcut harvest and group selection are considered to be equal in the habitat capability models). However, comparisons between alternatives would still be useful as silvicultural prescriptions remain the same between alternatives.

The wildlife habitat capability models were designed to reflect only the effects of clear-cutting and there has not been a model adjustment for other harvest methods. As a result, the effects indicated by the models are more severe than we would actually expect. We expect effects on wildlife populations to be less than those predicted by the habitat capability model in areas where the harvest method leaves a large percentage of the unit standing. An example is the group selection harvest method which harvests only 20 percent of the unit. We expect the harvest of selected gaps to have little effect on habitat capability for deer in the short term. Subsequent harvests would increase impacts. Where the majority of a unit is cut (clearcut with reserve trees and seed tree cut), we expect that affects on wildlife populations will be similar to those predicted by the habitat capability models. Harvest methods are discussed in greater detail in Chapter 2 of this EIS.

Logging systems (helicopter yarding and cable yarding) influence the arrangement of the trees left in the unit. Helicopter yarding provides the most flexibility in the arrangement of trees left standing. In general, trees left standing will most likely be clumped into small groups because of yarding restrictions, safety concerns, and blowdown considerations. Standing live trees would provide stand diversity, wildlife habitat, and a future source of snags.

Overstory removal harvest methods have the most variable effect on wildlife depending on the percentage of the volume that is removed and the amount of residual stand that is left after the harvest operations. For the Project Area, overstory removal harvest methods range from cutting 40 to 90 percent of the volume in each unit. Because of the structure of

most of the old-growth stands, removing 40 to 90 percent of the volume could result in removing only 20 to 50 percent of the trees in the stand because much of the total stand volume is tied up in relatively few large trees. Table 2-1 in Chapter 2 displays the acres proposed for each harvest method by Alternative.

Sitka Black-tailed Deer

Harvesting old-growth forest in the Project Area would reduce the suitability of habitat for Sitka black-tailed deer. Four types of impacts would result from clearcutting old-growth forest (Hanley 1984):

- logging slash makes it difficult for deer to pass through clearcuts, and reduces available habitat;
- lack of snow interception in clearcuts reduces the availability of forage during winter;
- the nutritional quality of plants growing in open sunny clearcuts would be lower than plants growing in shaded old-growth forests; and
- forage production would be significantly reduced following canopy closure of the regenerating forest, and would remain low for at least 100 years.

Results of the habitat capability analysis for Sitka black-tailed deer are displayed in Tables 4-15 and 4-16 for 1994 and the action alternatives.

Table 4-15
Resulting Habitat Capability for Sitka Black-tailed Deer in the Project Area by Action Alternative

WAA	1994 Alt. 5	Alt. 1	% Change	Alt. 2	% Change	Alt. 3	% Change	Alt. 4	% Change
3001	1,894	1878	-0.8	1,871	-1.2	1,899	0.3	1,868	-1.4
3312	478	475	-0.6	477	-0.2	474	-0.8	474	-0.8
3313	899	895	-0.4	856	-4.8	868	-3.4	862	-4.1
3314	948	953	0.5	948	0	953	0.5	953	0.5
Total	4,219	4,201	-0.4	4,152	-1.6	4,194	-0.6	4,157	-1.5

Source: Hawks 1995. Data derived from GIS data base and Suring et al. 1992. Note: Habitat capability reductions due to future canopy closures is not represented in this table.

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Table 4-16

Resulting Habitat Capability for Sitka Black-tailed Deer in the Project Area by Action Alternative with Adjustment for Patch Size.

WAA	1994 Alt. 5	Alt. 1	% Change	Alt. 2	% Change	Alt. 3	% Change	Alt. 4	% Change
3001	834	657	-21.2	814	-2.4	834	0	592	-29.0
3312	176	151	-14.2	175	-0.6	148	-15.9	148	-15.9
3313	412	365	-11.4	381	-7.5	289	-29.9	279	-32.2
3314	454	442	-2.6	454	0	442	-2.6	442	-2.6
Total	1,876	1,615	-13.9	1,824	-2.8	1,713	-8.7	1,461	-22.1

Source: Hawks 1995. Data derived from GIS data base and Suring et al. 1992 and A. Warm, 1995.

Road construction would improve hunter access to the Project Area. Improved road access under each of the alternatives may result in greater hunter success for deer. Since the roads in the Project Area are not linked to the Sitka road system, hunters would have to transport ORVs by boat to the remote roads. Roads open to ORVs would have greater impacts than roads closed to vehicular traffic. This increased vehicular access would last until the road is physically closed by pulling culverts and bridges or until the road becomes overgrown with alder. Closed roads would support hunter access on foot for several years following harvest.

Brown Bear

Clearcuts should provide suitable habitat for brown bear because of the abundant production of forage plants during early stages of forest succession. However, research on Chichagof Island indicates that brown bear generally avoid clearcuts, possibly because other sites provide more nutritious foraging and better cover (Schoen and Beier 1989).

The results of the habitat capability analysis for brown bear are displayed in Tables 4-17 and 4-18 for 1994 and the action alternatives.

Table 4-17

Resulting Habitat Capability for Brown Bear in the Project Area by Action Alternative

WAA	1994 Alt.5	Alt.1	% Change	Alt.2	% Change	Alt.3	% Change	Alt. 4	% Change
3001	68	65	-4.4	68	0	65	-4.4	64	-5.9
3312	29	27	-6.9	29	0	27	-6.9	27	-6.9
3313	46	41	-10.9	45	-2.2	40	-13.0	40	-13.0
3314	55	51	-7.3	55	0	51	-7.3	51	-7.3
Total	198	184	-7.1	197	-0.5	183	-7.6	182	-8.1

Source: Hawks 1995. Data derived from GIS data base and Schoen et al. 1992.

Roads increase access for hunters and poachers, the probability of vehicle-bear collisions, and the frequency of energy-intensive flight responses by bear (McLellan and Shackleton 1988). Since the Project Area roads will not be linked to any community, the disturbance to bear would be greatest during road building and timber harvest activity. ORVs could easily be transported by boat to roads in the Project Area. Roads remaining open would have greater impacts on bear than roads closed to vehicular traffic, although closed roads could support some level of vehicle and foot traffic for several years following logging. Thus, brown bear could be affected by human disturbances under each of the action alternatives.

Table 4-18

Resulting Habitat Capability for Brown Bear in the Project Area by Action Alternative With Adjustment for Roads.

WAA	1994 Alt.5	Alt.1	% Change	Alt.2	% Change	Alt.3	% Change	Alt. 4	% Change
3001	50	47	-6.0	48	-4.0	48	-4.0	47	-6.0
3312	27	25	-7.4	27	0	25	-7.4	25	-7.4
3313	32	29	-9.4	31	-3.1	28	-12.5	28	-12.5
3314	45	42	-6.7	45	0	42	-6.7	42	-6.7
Total	154	143	-7.1	151	-1.9	143	-7.1	142	-7.8

Source: Hawks 1995. Data derived from GIS data base and Schoen et al. 1992.

River Otter

Harvesting old-growth forest and constructing logging roads in or near beach fringe, estuary fringe, stream corridors, and riparian habitat in the Project Area would reduce habitat for river otters. The results of the habitat capability analysis for river otter (displayed in Table 4-19) indicate no change in habitat capability under any of the alternatives.

Table 4-19

Resulting Habitat Capability for River Otter in the Project Area by Action Alternative

WAA	1994 Alt.5	Alt.1	% Change	Alt.2	% Change	Alt.3	% Change	Alt. 4	% Change
3001	25	25	0	25	0	25	0	25	0
3312	11	11	0	11	0	11	0	11	0
3313	14	14	0	14	0	14	0	14	0
3314	17	17	0	17	0	17	0	17	0
Total	67	67	0	67	0	67	0	67	0

Source: Hawks 1995. Data derived from GIS data base and Suring et. al. 1992.

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Marten

Harvesting old-growth forest in the Project Area would reduce habitat for marten. Clear-cutting reduces resting sites, the number of winter hunting sites, the amount of overhead cover, and preferred prey (Suring et al. 1992). Marten generally avoid open habitats such as clearcuts because deep snow during winter and dense vegetative growth during summer reduce successful foraging (Steventon and Major 1982). Populations of red squirrels, a primary food source for marten in Southeast Alaska, have been shown to decline significantly following clearcutting (Wolff and Zasada 1975; Medin 1986). Clearcuts retain some habitat value for marten because residual slash provides overhead cover and some less-preferred prey species are available. Research results indicate that clearcut use by marten is very limited in Southeast Alaska (Suring et al. 1992b). Results of the habitat capability analysis for marten is displayed in Table 4-20.

Table 4-20
Resulting Habitat Capability for Marten in the Project Area by Action Alternative

WAA	1994 Alt.5	Alt.1	% Change	Alt.2	% Change	Alt.3	% Change	Alt. 4	% Change
3001	83	79	-4.8	81	-2.4	83	0	79	-4.8
3312	37	36	-2.7	37	0	36	-2.7	36	-2.7
3313	67	64	-4.5	61	-9.0	61	-9.0	61	-9.0
3314	71	70	-1.4	71	0	70	-1.4	70	-1.4
Total	258	249	-3.5	250	3.1	250	-3.1	246	-4.7

Source: Hawks 1995. Data derived from GIS data base and Suring et al. 1992.

Construction of logging roads would cause additional impacts to marten in the Project Area. Logging roads improve access for trappers which could potentially result in over-harvesting of resident marten populations. Roads remaining open would have greater impacts on marten than roads closed to vehicular traffic, although closed roads could support some level of ORV traffic for several years following logging. Thus, under each of the action alternatives, it is possible that marten could be overharvested as a result of improved access on logging roads. Habitat capability adjustments for marten due to road density and patch sizes are shown in Tables 4-21 and 4-22.

Table 4-21

Resulting Habitat Capability for Marten in the Project Area by Action Alternative With Adjustment for Road Density

WAA	1994 Alt.5	Alt.1	% Change	Alt.2	% Change	Alt.3	% Change	Alt. 4	% Change
3001	66	46	-30.3	44	-33.3	66	0	36	-45.5
3312	37	31	-16.2	37	0	30	-18.9	31	-16.2
3313	42	38	-9.5	34	-19.0	35	-16.7	36	-14.3
3314	71	70	-1.4	71	0	71	0	71	0
Total	216	185	-14.4	186	-13.9	202	-6.5	174	-19.4

Source: Hawks 1995. Data derived from GIS data base and Suring et al. 1992

Table 4-22

Resulting Habitat Capability for Marten in the Project Area by Action Alternative With Adjustment for Patch Size

WAA	1994 Alt.5	Alt.1	% Change	Alt.2	% Change	Alt.3	% Change	Alt. 4	% Change
3001	43	33	23.3	39	-9.3	43	0	29	-32.6
3312	18	16	-11.1	18	0	16	-11.1	16	-11.1
3313	38	33	-13.2	35	-7.9	27	-28.9	27	-28.9
3314	39	37	-5.1	39	0	37	-5.1	37	-5.1
Total	138	119	-13.8	131	-5.1	123	-10.9	109	-21.0

Source: Hawks 1995. Data derived from GIS data base, Suring et al. 1992, and Warm 1995.

Mountain Goat

The primary considerations in the evaluation of habitat for mountain goat in Southeast Alaska are availability of food and proximity to escape terrain (Suring et al. 1988).

Important components of the habitat capability model for mountain goat include: cliffs, distance from cliffs, location, aspect, and vegetation. The model has no habitat value for areas greater than ½ mile from cliffs. Habitats near cliffs are not suitable for commercial timber production. The results of the habitat capability analysis for mountain goat are displayed in Tables 4-23 and 4-43 for 1994 and the action alternatives.

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Table 4-23

Resulting Habitat Capability for Mountain Goat in the Project Area by Action Alternative

WAA	1994 Alt.5	Alt.1	% Change	Alt.2	% Change	Alt.3	% Change	Alt. 4	% Change
3001	50	49	-2.0	49	-2.0	50	0	49	-2.0
3312	0	0	0	0	0	0	0	0	0
3313	7	7	0	7	0	7	0	7	0
3314	7	7	0	7	0	7	0	7	0
Total	64	63	-1.6	63	-1.6	64	0	63	-1.6

Source: Hawks 1995. Data derived from GIS data base and Suring et. al. 1988.

Road building may impact goats by increasing human access. Hunted populations of mountain goats are sensitive to disturbance, poaching, and overharvest following the establishment of human activities in occupied habitat. Roads that increase access to alpine habitat would be closed to reduce potential impacts to mountain goats. Alternatives 1 and 4 both propose harvest in VCU 300 and both potentially increase access to Annahootz Mountain, a popular goat-hunting destination. VCU 300 is within the Project Area WAA with the highest goat harvest (WAA 3001). Road management objectives (Appendix D) for both of these alternatives propose a Level 1 maintenance level and the most restrictive post-harvest traffic strategy, elimination. These are the most restrictive post-harvest safe guards that can be taken. Special hunting regulations may need to be established by the State during logging and road construction activities if they occur during goat hunting season.

Table 4-24

Resulting Habitat Capability for Mountain Goat in the Project Area by Action Alternative with Adjustment for Roads

WAA	1994 Alt.5	Alt.1	% Change	Alt.2	% Change	Alt.3	% Change	Alt. 4	% Change
3001	31	31	0	30	-3.2	31	0	31	0
3312	0	0	0	0	0	0	0	0	0
3313	5	6	20.0	6	20.0	6	20.0	6	20.0
3314	3	3	0	3	0	3	0	3	0
Total	39	40	2.6	39	0	40	2.6	40	2.6

Source: Hawks 1995. Data derived from GIS data base and Suring et. al. 1988.

Brown Creeper

Brown creeper are dependent on high volume old-growth timber with tree size being more important than tree species. As a result, brown creeper can be affected by timber harvest. The brown creeper model was run with an adjustment for patch. The results of

the habitat capability analysis for brown creeper are displayed in Tables 4-25 and 4-26 for 1994 and the action alternatives.

Table 4-25
Resulting Habitat Capability for Brown Creeper in the Project Area by Action Alternative

WAA	1994 Alt.5	Alt.1	% Change	Alt.2	% Change	Alt.3	% Change	Alt. 4	% Change
3001	97	94	-3.1	93	-4.1	97	0	92	-5.2
3312	16	15	-6.3	16	0	15	-6.3	15	-6.3
3313	115	110	-4.3	99	-13.9	100	-13.0	98	-14.8
3314	76	75	-1.3	76	0	75	-1.3	75	-1.3
Total	304	294	-3.3	284	-6.6	287	-5.6	280	-7.9

Source: Hawks 1995. Data derived from GIS data base and Suring 1988.

Table 4-26
Resulting Habitat Capability for Brown Creeper in the Project Area by Action Alternative with Adjustment for Patch Size

WAA	1994 Alt.5	Alt.1	% Change	Alt.2	% Change	Alt.3	% Change	Alt. 4	% Change
3001	31	31	0	30	-3.2	31	0	31	0
3312	0	0	0	0	0	0	0	0	0
3313	5	6	20.0	6	20.0	6	20.0	6	20.0
3314	3	3	0	3	0	3	0	3	0
Total	39	40	2.6	39	0	40	2.6	40	2.6

Source: Hawks 1995. Data derived from GIS data base, Suring 1988, and Warm 1994.

Bald Eagle

Nesting bald eagles are vulnerable to human disturbance. However, because they vary considerably in their response to human activity, it is difficult to predict the effects of specific disturbances on individual eagles (Sidle et al. 1986). Potential disturbance activities of proposed Project actions include road construction, timber harvest, helicopter flights, and truck and heavy equipment traffic. Decreased survival or productivity of nesting bald eagles is an important management concern (Sidle et al. 1986).

The bald eagle and its habitat have been given special protection through an Interagency Agreement between the Forest Service and the US Fish and Wildlife Service (USFWS) (USDA Forest Service 1990), and by the Bald Eagle Protection Act. Among the provisions of the agreement are: requirement of a 330-foot area of no timber harvest or road construction around eagle nest trees, timing restrictions for blasting within ½ mile of eagle nests, avoiding repeated helicopter flights or helicopter yarding activities within ¼

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mile of an active eagle nest, and a requirement that consultation with the USFWS take place when any portion of the agreement cannot be met.

Five bald eagle nest trees in one or more alternatives are within 330 feet of an existing road proposed for reconstruction (Table 4-27). No eagle nest trees were identified within 330 feet of a proposed harvest unit or within 330 feet of a road proposed for new construction.

Table 4-27
Eagle Nest Trees within 330 feet of a road within the Project Area.

Eagle Tree Number	VCU	Road Number	Volume of Timber (mmbf) Accessed by these Roads by Alternative			
			1	2	3	4
12325007	301	7558		5.4		
12325013	292	7586	7.1	24.8	24.8	24.8
12325072	300	7574	2.9			2.9
12325077	302	75831	7.6	13.1		8.7
12325091	292	7587	7.1	24.8	24.8	24.8

Source: Hartmann 1995.

Planning development activities away from beach fringe, estuary, and riparian habitat, including Class I and II streams effectively eliminates impacts to bald eagle habitat. There is no reduction of bald eagle habitat capability under any alternative.

Habitat Capability Summary

Table 4-28 summarizes the percent change in habitat capability by species and alternative for the Project Area.

Table 4-28
Summary of Percent Reduction in Habitat Capability by Species and by Action Alternative

Species	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Sitka Black-tailed Deer	0.4	1.6	0.6	1.5
Brown Bear	7.1	0.5	7.6	8.1
River Otter	0.0	0.0	0.0	0.0
Marten	3.5	3.1	3.1	4.7
Mountain Goat	1.6	1.6	0	1.6
Brown Creeper	3.3	6.6	5.6	7.9
Bald Eagle	0.0	0.0	0.0	0.0

Effects of Helicopter Operations on Wildlife

Helicopters would be used in the Project Area for yarding logs, transporting personnel and equipment in and out of harvest units, and general personnel transport.

The primary concern expressed is that low-level flights over wild animals, especially mountain goat, brown bear and eagles, may cause physiological and/or behavioral responses that reduce the animals' fitness or ability to survive.

Helicopters provide direct sound and sight stimuli for the various types of encounters with wildlife in their natural setting. These include fly by or over, approach and take-off patterns to landings, hovering, actual landing and sitting with the engine operating, as well as varying levels and types of sounds created by blade pitch and distance of helicopters from the animal. Habitat capability modeling was not used to analyze the effect of helicopter operation on wildlife because these models are intended to portray changes in habitat capability based on changes in vegetation, primarily forested overstory.

The effect on wildlife depends on life history characteristics of the species, characteristics of the aircraft and flight activities, and a variety of other factors such as habitat type and previous exposure to aircraft. While the behavioral responses by animals to over-flights have been well documented for several species, few studies have addressed the indirect consequences.

Brown Bear

According to ADF&G Biologists, if the intrusions are infrequent and unpredictable, the impacts would be minimal and non-measurable excepting for the immediate behavioral responses. However, if the helicopter landed at a locale periodically over the spring (April through May), there seems little doubt that bear frequenting the area would move to another area or change their temporal habitats.

Bald Eagle

Helicopter operations have the potential for disturbance of eagles. Eagles will vary considerably in their response to human activity. Some pairs will tolerate constant activity near the nest territory, others will abandon their nests. The interagency agreement between the Forest Service and the USFWS recommends that repeated helicopter flights and helicopter logging be avoided within ¼ mile of an eagle nest tree.

Table 4-29 displays the number of identified bald eagle nest trees within ¼ mile of a unit to be yarded by helicopter for the action alternatives. Table 4-30 displays the number of eagle nest trees within ¼ mile of a helicopter yarding flight path for the action alternatives.

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Table 4-29

Nest Tree within ¼ Mile of Helicopter Units for the Project Area By Action Alternatives

Nest Tree Number	Unit(s) Within ¼ Mile of Nest Tree (harvest unit no.)	VCU	Volume of Timber in Units in Board Feet			
			Alt. 1	Alt. 2	Alt. 3	Alt. 4
12334004	1145	292	*	2,080	*	2,080
12325088	3012	292	*	2,729	2,729	2,729
12325014	3014	292	*	867	867	867
12325089						
12325090	3015	292	*	545	545	545
12325015						
Total 6 Nest Trees	Total 4 units		Total Vol. 0	Total Vol. 6,221	Total Vol. 4,141	Total Vol. 6,221

Source: Suminski 1995, based on GIS. * Unit not included in this alternative.

Table 4-30

Nest Trees within ¼ Mile of Helicopter Yarding Flight Path for Project Area by Action Alternatives

Nest Tree Number	Unit(s) Within 1/4 Mile of Yarding Flight Path	VCU	Volume of Timber in Unit in Board Feet			
			Alt. 1	Alt. 2	Alt. 3	Alt. 4
12335122	2042	289	*	455	455	455
	2043	289	*	1,630	1,630	1,630
12325013	3151	292	*	1,061	1,061	1,061
12325091	3141	292	*	803	803	803
	3201	292	*	370	370	370
	3143	292	*	556	556	556
	3142	292	*	1,121	1,121	1,121
12325092	3223	292	*	211	211	211
	3224	292	*	240	240	240
Totals 4 Nest Trees	9 units		Total Vol. 0	Total Vol. 6,447	Total Vol. 6,447	Total Vol. 6,447

Source: Suminski, 1995, based on GIS. * Unit not included in this alternative.

Mountain Goat

Mountain goat may be susceptible to disturbance by aircraft since they select high, steep and broken terrain. Other than direct avoidance behavior, little is known about the effects of helicopters on goat.

ADF&G guidelines recommend that aircraft maintain a 1,500-foot distance from goat habitat. Based on this recommendation, the units within 1,500 feet of known goat summer habitat (since helicopter logging would occur only while goats are in their summer range) were identified. Mountain goats kid (bear their young) from May 15 through June 15. It is recommended, if mountain goats are sighted within 1,500 feet of a unit, helicopter yarding be delayed until after the kidding season. See Table 4-31 for harvest units within 1,500 feet of known mountain goat habitat.

Table 4-31
Harvest Units Within 1,500 Feet Horizontal Distance of Known Mountain Goat Habitat for the Project Area by Action Alternative

WAA	Unit Number	Timber Volume in Unit in Board Feet			
		Alt. 1	Alt. 2	Alt. 3	Alt. 4
3313	1061	*	347	347	347
	1065	*	203	203	203
	1071	*	593	593	593
	1072	*	286	286	286
	1221	795	795	795	795
	1211	*	144	*	144
	1231	530	530	530	530
	1171	*	729	729	729
	3012	*	2729	2729	2729
	3014	*	867	867	867
	3033	*	193	193	193
	3041	560	560	560	560
	1271	479	479	479	479
	1251	930	930	930	930
	3132	117	117	117	117
	3141	*	803	803	803
	3142	*	1121	1121	1121
	3143	*	556	556	556
	3141	*	1061	1061	1061
	3281	*	442	442	442
3001	7273	71	*	*	71

Source: Suminski 1995, based on ADF&G Young 1995. * Unit not included in this alternative.

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Logging Camps and LTFs

There are two types of effects on wildlife associated with an LTF and logging camp. First, there is the potential loss of wildlife habitat as a result of clearing activities for the camp, sort yard, and associated facilities. Second, and more importantly, there is the disturbance to wildlife as a result of increased human activity associated with a logging camp. Both of these effects are addressed in more detail in the Subsistence section of the EIS.

Whenever possible, camps and sort yard facilities are located away from the highest quality habitat. The difference between a log slide and a bulkhead facility are inconsequential in their effects on wildlife. The objectives are to avoid eagle nest sites and estuarine habitat.

Wildlife may be adversely affected by human activity associated with the camps and facilities. This includes disturbance of wildlife use patterns, increased harvest, and increased human-bear encounters. These effects are minimized when the camp facilities are on a barge (floating camp) as opposed to being located on the uplands. The overall effects of disturbance of the wildlife use patterns are expected to be minor.

Comparison of Alternatives

The main direct effect on wildlife habitats under each action alternative is reduced habitat capability of the Project Area for each Management Indicator Species except river otter and bald eagle. Alternatives 4 and 2 would result in the greatest reductions in habitat capability for the affected management indicator species because the most old-growth forest would be harvested under these alternatives.

Both direct and indirect effects on habitat capabilities for Management Indicator Species would occur under all action alternatives since the effects are a result of timber harvest which would reduce the amount of wildlife habitat.

Effects have been reduced under all alternatives by maintaining a minimum 100-foot stream buffer on all Class I and II streams and expanding this, where feasible (Lisa Creek and Range Creek), to a larger riparian buffer to accommodate animal species like brown bear which are highly dependant on riparian habitats. Other measures to reduce effects include buffering estuaries and beach fringe and applying RMOs as specified in Appendix D.

Cumulative Effects

Cumulative effects are the result of changes in the environment caused by the interaction of natural ecosystem processes and the effects of multiple management actions. Wildlife habitat would be reduced by removing timber from the Project Area.

Table 4-32
Acres Impacted by Past and Proposed Logging and Road Building and
Cumulative Percent of Project Area Habitats Impacted Under Each Action Alternative

Habitat Type	Acres Cut or Roaded 1954-1994	Percent of Habitat Altered	Alt. 1		Alt. 2		Alt. 3		Alt. 4	
			Acres	Cum. %	Acres	Cum. %	Acres	Cum. %	Acres	Cum. %
Beach Fringe	738	-18.7	4	-18.8	3	-18.8	3	-18.8	7	-18.9
Estuary Fringe	981	-20.2	22	-20.7	18	-20.6	7	-20.4	21	-20.7
Riparian	630	-41.9	74	-42.4	83	-42.5	67	-42.4	100	-42.6
Old growth	12,207	-19.1	1,672	-21.7	2,342	-22.8	1,759	-21.9	3,078	-23.9
Second growth	9,573	+1,926	58	+1,914	63	+1,913	48	+1,916	34	+1,909
Non-commercial	2,633	+5.2	160.6	+5.5	205.8	+5.6	139.8	+5.5	391.4	+5.8
Alpine/Subalpine	0	0	0	0	0	0	0	0	0	0

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Table 4-33

Cumulative Change in Habitat Capability in the Project Area by Action Alternative

Species	Habitat Capability in 1954	Percent Change to 1994	Cumulative Percent Change in Habitat Capability by Alternative since 1954			
			Alt. 1	Alt. 2	Alt. 3	Alt. 4
Sitka Black-tailed Deer	5,101	-17.3	-17.6	-18.6	-17.8	-18.5
Brown Bear	221	-10.4	-16.7	-10.9	-17.2	-17.6
River Otter	121	-44.6	-44.6	-44.6	-44.6	-44.6
Marten	317	-18.6	-21.5	-21.1	-21.1	-22.4
Mountain Goat	74	-13.5	-14.9	-14.9	-13.5	-14.9
Brown Creeper	2,120	-85.7	-86.1	-86.6	-86.5	-86.8
Bald Eagle	383	-50.8	-50.8	-50.8	-50.8	-50.8

Old-growth Habitat

The action alternatives would harvest between 1,672 and 3,078 acres of old-growth habitat.

Table 4-34

Cumulative Effects of Timber Harvest and Roads on Acres of Old-Growth Habitat Through the Year 2008

Alternative	Acres Harvested or Roaded Pre-1994	Project Acres Harvested or Roaded 1997-2008	Cumulative Acres Harvested Through 2008	Percent Cumulative Change of Old-Growth Habitat
1	12,207	1,672	13,879	-21.7
2	12,207	2,342	14,549	-22.8
3	12,207	1,759	13,966	-21.9
4	12,207	3,078	15,285	-23.9
5	12,207	0	12,207	-19.1

Successional Changes

The action alternatives would result in further conversion of a natural old-growth-dominated forest stand to a mosaic of old-growth and early successional stages (see Figure 3-1 in Chapter 3).

Long-Term Productivity

Primary long-term impacts on wildlife result from loss of old-growth habitat. Sitka black-tailed deer, brown bear, marten, and brown creeper depend on old growth and would experience reductions in long-term habitat capability. Impacts of this will be greatest during critical times of the year (e.g., winter habitat for deer). Habitat capabilities for brown bear and marten would decline further if roads are left open, resulting in human-related disturbance and mortality.

Canopy closure in second-growth stands results in reduced habitat capability for deer, marten, and brown bear. Thinning second-growth stands could delay canopy closure to offset negative impacts of post-harvest succession.

Population Viability

Wildlife habitat must be managed to maintain viable populations of existing native and desired non-native vertebrate species across the National Forests. For planning purposes, a viable population is one that has the estimated numbers and distribution of reproductive individuals needed to ensure its continued existence, and is well distributed throughout the existing range of the species. In order to maximize the probability that viable populations will be maintained over time, habitat must be provided to support at least a minimum number of reproductive individuals and that habitat must be well distributed and connected so that those individuals can interact with others. The NFMA does not require individual project areas to independently maintain viable populations, but the Project Area should not cause a decline of overall viable populations for the East or West Baranof Island Ecological Provinces (USDA Forest Service 1991).

Recent efforts to refine the process of population viability for the revision of the Forest Plan led to the convening of the Interagency Viable Population Committee. This Committee focused on viability risk assessments that could be applied to the evaluation of planning alternatives Forest-wide. The Committee's recommendations are still in draft form and have recently undergone a peer review under the direction of the Pacific Northwest Research Station (Kiestler and Eckhardt 1994). The peer review resulted in several recommendations on alternatives and refinements to the Committee's strategy. The recommendations in the peer review are being considered for application in revision of the TLMP; however, the Committee's strategy is still the latest approach to maintaining viable populations. The Committee recommended Habitat Conservation Areas (HCAs) of three sizes: large, medium, and small (Suring et al. 1993). The objective of the HCAs is to provide sufficient habitat for wildlife species which require large tracts of old-growth forest.

The Population Viability Committee mapped one possible layout of large and medium HCAs for the Tongass National Forest (Suring et al. 1993). The Project Area contains one proposed large and one medium HCA (See Figure 2-4). No roads or units are being considered in the proposed HCAs.

In addition to the HCAs, the Population Viability Committee recommends that corridors of old-growth forest habitat be established to increase the likelihood of dispersal of species throughout the landscape (Suring et al. 1993). Corridors in the Project Area include 500-foot beach fringes, 1,000-foot estuary fringes, and minimum 100-foot buffers

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along Class I and II streams. Roads would be constructed through beach and estuary fringe and through riparian buffers under all action alternatives.

Biological Diversity

Biological diversity (biodiversity) encompasses the variety of life in an area, including the genetic pools, species, plant and animal communities, ecosystems, and processes through which individual organisms interact with each other and their environments. Forest-wide standards and guidelines direct the planning and management for biodiversity by maintaining, in a healthy state, species of animals and plants historically native to Southeast Alaska (Forest Service 1991a).

The diversity of plant and animal species in the Project Area would not be affected by the proposed action. All alternatives are expected to maintain viable populations of all plant and animal species in the Project Area.

Marine Environment

Marine Fish

The effects of LTFs on fish resources have not been quantifiably demonstrated. It is unlikely that any effects on returning adult fish would occur. LTF siting guidelines require a 300-foot buffer from the mouth of a Class I stream. Juvenile pink and chum salmon that spend several months immediately after migration out of streams in protected bays and coves would more likely be affected by activities in the marine environment. These small fish are highly mobile as they actively feed on marine invertebrates. Some of their preferred food items live on the ocean bottom. Bark accumulation and the LTF generally cover less than one percent of the habitat area of their prey species, based on the size of estuary and regional average of bark accumulation of 1.96 acres (Faris and Vaughn 1985). The average LTF footprint range of 0.1 to 0.5 acres (depending on type of structure) is unlikely to cause measurable adverse consequences.

There is no documentation that LTF structures or activities associated with their use conflict with commercial fishing near the facility. No adverse consequences on commercial fishing are anticipated as the result of LTF locations. Camps associated with an LTF site may cause additional local competition for fish and marine resources.

Marine Shellfish

The potential impact of concern at log transfer sites is bark deposits which smother ocean bottom organisms. The rate of bark accumulation varies with conditions at each facility. The design of the facility partially determines the amount of bark lost (loss of bark has been directly related to the speed of log entry into the water), and the configuration of the location determines the dispersion of bark by currents and winds. Log raft storage areas accumulate bark at a much slower rate than the immediate area of the LTF.

A known effect of bark and debris accumulation is that little-neck clams and bay mussels have been shown to be eliminated when as little as 10 to 13 inches of bark accumulated (Freese and O'Clair 1984). Further, Conlan and Ellis (1979) reported molluscs and several polychaetes were excluded by bark debris greater than 2.5 centimeters in thickness, and the effects of bark may last several decades. Deposition of more than a 1-centimeter layer of wood waste has been observed to produce losses of suspension feeding organisms, with major community composition changes associated with a 5-centimeter accumulation (Conlon and Ellis 1979). In 15-centimeter deposits, suspension feeding organisms were absent and the area was dominated by a few abundant deposit feeding organisms. It can be assumed that other plants and animals that live in and on the bottom would be similarly affected.

Freese (1987) indicates that once ocean bottom deposits of bark are in place, they are very resistant to decomposition or transport away from the immediate area. In general, however, the area impacted by bark is relatively restricted.

Direct Effects

Direct effects to the marine environment are those that occur in the same time or same place as the current timber harvesting and road construction activities. Direct effects of

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LTFs are limited to the intertidal area affected by rock fill at the LTF site (see proposed LTF locations on enclosed Alternative maps).

In most cases, the intertidal zone affected by rock fill for the facility would range from 0.1 acre up to 0.5 acre. Bark accumulation varies between locations depending on the slope of the bottom, and tidal and wave action. The impacts are estimated to be comparable to LTFs nearby, or approximately 1.96 acres at each site (a regional average based on a study of 32 LTFs in Southeast Alaska) (Faris and Vaughan 1985).

Indirect and Cumulative Effects

Bark depth may increase slightly, but the area covered would not be expected to increase with reuse of the previously used LTF sites at Rodman Bay, Noxon Creek, and Lisa Creek. Schulze Cove has been used as a log rafting area. Bark deposits would not be significantly increased by use of the proposed LTF. At the proposed barge facility in St. John Baptist Bay, there would be little to no bark accumulation because logs will not be placed directly in the water. The same would hold true with the Appleton Cove barge site.

Rock fill or riprap, though it may cover the current habitat, also provides habitat for future colonization by marine species (Forest Service 1986). Through the years, either the rock fill or the regraded beach at each LTF location would be expected to recolonize with species similar to those currently occurring in the region, thereby maintaining productivity of the marine habitat.

Endangered Species

Wildlife

Of the wildlife species which occur in the Project Area, three are Federally listed as “Endangered” and four are Federally listed as “Species of Concern.”

Endangered Species

Humpback Whale

The only proposed activities likely to result in impacts to humpback whales are the development and use of LTFs and their associated camps and the movement of log rafts from LTFs to mills. Construction and operation of LTFs and other docking facilities are restricted to small, very localized areas of the marine environment. Construction and operation of LTFs are unlikely to affect prey availability for humpback whales.

Humpback whales could be disturbed by increased boat traffic associated with LTFs. Disturbance impacts would be localized in nature and would be highly variable, depending on many factors such as the size of the bay, water depth, number of boats, and individual behavioral responses of humpback whales. Behavioral responses could include sounding, breaching, evasive underwater maneuvers, and maintaining distance.

Steller Sea Lion

Harassment or displacement of Steller sea lions from preferred habitats by human activities such as boating, recreation, aircraft, LTFs, and log raft towing is a concern with regard to long-term conservation of the sea lion in Southeast Alaska. LTF construction and operation are unlikely to affect prey availability for Steller sea lions since these and related activities are restricted to small, very localized areas of the marine environment. In addition, the permitting process for LTFs requires that monitoring be conducted to maintain water quality and marine circulation and flushing during construction and operation of LTFs. As a result, prey for Steller sea lions is unlikely to be affected.

American Peregrine Falcon

The American peregrine falcon would not be affected as a result of any of the proposed alternatives. This species occurs in Southeast Alaska only during migration. Peregrine falcons generally occur in areas of high prey densities such as seabird rookeries or waterfowl concentration areas. No seabird rookeries or waterfowl concentration areas are located in the Project Area.

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Biological Assessments for animals and plants are included in Appendix B.

Species of Concern

Marbled Murrelet

Marbled murrelets are common in Southeast Alaska and nest in old-growth forest stands up to 53 miles from saltwater. Marbled murrelets more commonly occupy larger stands (greater than 500 acres) than smaller stands (less than 100 acres). Since all inland forest stands in the Project Area are less than eight miles from salt water, all could be potential marbled murrelet nesting habitat. Without precise knowledge of marbled murrelet nesting habitat requirements, all old-growth habitat with greater than 8 mbf per acre is assumed to be suitable for nesting.

All action alternatives will harvest stands which may be capable of providing nesting habitat for marbled murrelets. The factors currently limiting marbled murrelets in Southeast Alaska have not been identified. Assuming that availability of nesting habitat is a limiting factor for the population, then a reduction in availability of nesting habitat could result in a proportional effect on the population. In the Project Area, between 3.2 and 6.0 percent of the old-growth forest habitat would be harvested, potentially resulting in a comparable reduction in habitat capability for the marbled murrelet within the Project Area.

In summary, the Northwest Baranof Project may affect marbled murrelets, but the extent of this impact cannot be determined at this time. The Project Area is only a small fraction of the presumably suitable habitat in Southeast Alaska and any effects from this project would have minimal impact on the overall population in Southeast Alaska.

Northern Goshawk

Harvesting old-growth timber could reduce the quality and availability of nesting habitat for northern goshawk in the Project Area. Types of impacts from timber harvesting could include reduced foraging habitat quality, reduced prey densities, and increased competition from red-tailed hawks and other raptors (Crocker-Bedford 1990). These effects could potentially result in reduced population levels and reduced nesting success of northern goshawks (Crocker-Bedford 1990).

Northern goshawks are known to occur in the Project Area. Forest Service crews located one goshawk nest and one probable nest site during goshawk surveys. No harvest units were planned within 2 miles of either nest site in any of the alternatives. Management of goshawk nest sites and habitat in the Alaska Region is currently being studied by the Forest Service. Future management of goshawk nest sites and habitat in the Project Area will be guided by the direction that is developed for goshawk management for the Alaska Region.

Based on three years of intensive surveys, there is high confidence that timber harvest will not remove any active nest trees. There may be a reduction in the number of potential nest trees and a decrease in the amount of forage area of goshawks. Therefore, the Northwest Baranof Project could affect northern goshawks and potential habitat for goshawks.

Harlequin Duck

The Harlequin duck will not be affected by timber harvesting activities in the Project Area. The TTRA prohibits timber harvest within 100 feet of river and stream channels with fish habitat, thereby protecting potential nesting habitat for harlequin ducks. Wintering habitat also will not be affected because no proposed activities would occur in wintering habitat areas.

Olive-sided Flycatcher

In Southeast Alaska, the olive-sided flycatcher occurs primarily in second-growth forest and alder habitats, and occasionally in muskegs. Loss of habitat would occur only from construction of roads through these habitat types. Only 1 percent or less of the existing second growth, and about 1 percent of the existing riparian habitat in the Project Area would be affected by proposed harvest units and roads (Hartmann 1995). Alder occurs in disturbed sites including riparian and landslide areas. No units are proposed in landslide areas. Therefore, impacts to the olive-sided flycatcher resulting from loss of habitat are expected to be minor. Olive-sided flycatcher habitat may actually increase due to additional second growth created by harvest activities.

Fish

No Federally listed threatened or endangered fish species are known to occur in the Project Area, therefore, no effects are expected.

Plants

No threatened or endangered plant species occur in the Project Area. No sensitive plants were found during field surveys and none are expected to be affected by the proposed actions.

On-site Human Environment

Silviculture and Timber Management

Harvest by Volume Class

Tables 4-35 and 4-36 display the distribution of acres proposed for harvest in each action alternative for Volume Class 4 and 5. Because Alternative 5 proposes no timber harvest with this Project, it is not displayed.

Table 4-35
Proposed Harvest of Volume Class 4 Timber (in Acres and by Action Alternative)

VCU	Alt. 1	Alt. 2	Alt. 3	Alt. 4
287	19	0	19	19
288	242	0	250	250
289	0	87	87	87
290	0	0	0	0
291	45	116	114	116
292	238	505	487	535
299	65	0	0	65
300	258	139	0	313
301	89	130	0	130
302	174	299	0	299
Total	1,130	1,276	957	1,814

Source: Mork 1995

Table 4-36
Proposed Harvest of Volume Class 5 Timber (in Acres and by Action Alternative)

VCU	Alt. 1	Alt. 2	Alt. 3	Alt. 4
287	49	0	49	49
288	59	0	59	59
289	0	0	0	0
290	0	0	0	0
291	176	326	322	326
292	100	606	494	641
299	25	0	0	25
300	55	0	0	55
301	53	102	0	102
302	92	183	0	183
Total	609	1,217	924	1,440

Source: Mork 1995

Eight acres of harvest are proposed in Volume Class 6 (four acres in Unit 1171, VCU 291; and four acres in Unit 3201, VCU 292). These eight acres are proposed in Alternatives 2, 3, and 4. No Volume Class 7 timber is proposed for harvest.

Logging Systems

A variety of logging systems were considered for the Northwest Baranof Project (see discussion in Chapter 2). Each logging system has advantages, disadvantages, and constraints which limit its applicability. We selected logging systems for the harvest units in Northwest Baranof to capture the advantages of each system within the applicable constraints. As a result, both skyline and helicopter logging systems are used in each action alternative.

Table 4-37 shows a comparison of proposed logging system acreages for the action alternatives. Alternative 5 is not included, since it proposes no harvest for this project.

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Table 4-37
Comparison of Proposed Logging Systems by Action Alternative

	Alternative 1		Alternative 2		Alternative 3		Alternative 4	
	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent
Skyline	873	50	820	33	583	31	1,151	35
Helicopter	866	50	1,681	67	1,306	69	2,111	65
Total	1,739	100	2,501	100	1,889	100	3,262	100

Source: Mork 1995

The distribution of proposed logging systems varies for the action alternatives. Skyline systems (running skyline and live skyline) are proposed for 31 to 50 percent of the harvest acres; Alternative 3 proposes the least and Alternative 4 proposes the most acres for skyline logging. In the skyline category, live skyline is the dominant logging system for all action alternatives. Running skyline is proposed on minor acreage throughout the alternatives. Helicopter logging is proposed for 50 percent to 69 percent of the harvest acres.

Proportion of Volume Classes 6 and 7 Proposed for Harvest

The TTRA of 1990 modified the APC and KPC long-term timber sale contracts to:

Eliminate the practice of harvesting a disproportionate amount of old-growth timber by limiting the volume harvested over the rotation in Volume Classes 6 and 7, as defined in the TLMP and supporting documents, so that the proportion of volume harvested in these classes within a contiguous management area does not exceed the proportion of volume currently represented by these classes within the management area.

USDA Forest Service Handbook (FSH) 2409.18 Region 10 Supplement No. 2409.18-92-5, contains the procedure we currently follow in determining the proportionality requirements of the TTRA. Volume Classes 6 and 7, as defined in the TLMP, refers to volume strata with net inventory volume averaging more than 30,000 board feet per acre.

Since the long-term contract with APC was terminated by the Forest Service in 1994 and the volume from the Northwest Baranof Project is planned for independent sales, the requirements for proportionality do not apply to this project. However, the decision could be made in the future to implement timber harvest included in the Northwest Baranof project as KPC long-term contract offerings.

The basis for the current FSH method for proportionality analysis is the updated timber type map (TIMTYP) in the Forest Geographic Information System (GIS). TIMTYP is the timber resource base used for the TLMP revision, and has been updated to include harvest through November 28, 1990. This is the date the TTRA was signed into law, and is the basis for calculating proportionality. All wilderness, TTRA designated LUD II areas, and Class I and applicable Class II stream buffer zones have been excluded from

the updated TIMTYP base for assessment of proportionality. Timber harvest areas that are planned or harvested can be entered into GIS and combined with the updated TIMTYP layer to electronically calculate proportionality. However, the proportionality requirement of TTRA is specific to volume harvested, not volume planned or scheduled for harvest. The final determination of proportionality will be made based on the actual location of the designated harvest units.

Tables 4-38 and 4-39 display the proportionality for Management Areas C40 and C41 (described in Chapter 1 of this EIS), using existing FSH direction for the action alternatives. Since Alternative 5 proposes no timber harvest, it is represented by the current land base acres and proportionality. Each table shows the land base distribution of volume classes and proportionality as of November 28, 1990, and harvest projections based on the GIS TIMTYP layer.

Although the FSH documents the procedure we followed in determining the proportionality of the alternatives, questions have been raised concerning the acceptability of that procedure in court (Wildlife Society et. al. vs. Barton, J93-001 CIV). As a result, alternative methods are being evaluated, but there is no agreement at this time on alternative procedures. If the decision is made in the future to implement timber harvest planned in the Northwest Baranof EIS through one or more KPC long-term offerings, the proportionality analysis may be updated using an alternative method.

Table 4-38
TTRA Proportionality for Management Area C40

	Total Timber Base (acres)	Volume Classes 4 and 5 (acres)	Volume Classes 6 and 7 (acres)	Proportionality (percent)
Current Land Base (Alternative 5 - No Action)	52,331	51,867	464	.89
Proposed for Harvest - Alternative 1	-1,180	-1,180	---	
Projected Proportionality	51,151	50,687	464	.91
Proposed for Harvest - Alternative 2	-940	-940	---	
Projected Proportionality	51,391	50,927	464	.90
Proposed for Harvest - Alternative 3	-464	-464	---	
Projected Proportionality	51,867	51,403	464	.89
Proposed for Harvest - Alternative 4	-1,636	-1,636	---	
Projected Proportionality	50,695	50,231	464	.92

Source: Mork 1995.

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Table 4-39
TTRA Proportionality for Management Area C41

	Total Timber Base (acres)	Volume Classes 4 and 5 (acres)	Volume Classes 6 and 7 (acres)	Proportionality (percent)
Current Land Base (Alternative 5 - No Action)	27,653	26,945	708	2.56
Proposed for Harvest - Alternative 1	-559	-559	---	
Projected Proportionality	27,094	27,094	708	2.61
Proposed for Harvest - Alternative 2	-1,561	-1,553	-8	
Projected Proportionality	26,092	25,392	700	2.68
Proposed for Harvest - Alternative 3	-1,425	-1,417	-8	
Projected Proportionality	26,228	25,528	700	2.67
Proposed for Harvest - Alternative 4	-1,626	-1,618	-8	
Projected Proportionality	26,027	25,327	700	2.69

Source: Mork 1995

Long-term Productivity

The effects of all action alternatives on long-term timber productivity would be the conversion of unmanaged, old-growth stands to managed, faster growing, second-growth stands. In the summer, old-growth stands have lower forest floor temperatures than second-growth stands thus reducing biological activity. Organic decomposition slows, and as a result, the supply of available nutrients is reduced. With decreased biological activity, fewer nutrients are available for tree growth and the trees' nutritional status is lowered. While growth and vigor of old-growth stands remain nearly constant, they are at a level below that of second-growth stands (Harris and Farr 1974).

All stands proposed for harvest are well beyond the age of maximum average annual growth of the stand. Most are representative of uneven-aged western hemlock stands that commonly take hundreds of years to develop under natural conditions (unless they are changed by natural, large scale stand replacement events such as windthrow or manipulated by intensive forest management practices).

Species Composition

The open conditions created in clearcuts allow both Sitka spruce and western hemlock to regenerate rapidly. Even-aged stands are generally comprised of 10 to 75 percent (by volume) spruce, depending on the soil type and the age of the stand. The volume of spruce in even-aged stands 75 to 100 years after harvest averages about 50 percent (Taylor 1934) compared to 28 percent in existing mature and over-mature stands. With the use of silvicultural practices such as precommercial thinning, an additional 10 percent or more increase in the spruce component is expected. These percentages are based on clearcut harvest methods. Several different silviculture systems are proposed within the Project Area including clearcut with reserves, overstory removal, seed tree cut, and group

selection. (Refer to Chapter 2 for descriptions of each.) Except for the clearcut with reserves prescription, we expect these systems could affect the resulting species composition in different ways, but because they are relatively new to this area, the actual changes are not quantified. The overstory removal method may result in higher levels of western hemlock in the stands following harvest because the current understory is often dominated by hemlock. Western hemlock has the ability, unlike spruce, to grow under the canopy of larger trees with minimal light. This hemlock understory will be released from competition and will likely grow to become the dominant trees in the new stand with mostly hemlock regenerating underneath. Spruce will remain a component of the stand but may be reduced. The seed tree systems are predominantly designed to promote Alaska yellow cedar regeneration, but in some cases spruce seed trees may also be left. This may increase the proportion of cedar and possibly spruce. The effects from group selection will vary by the size, aspect, orientation, and shape of the groups. In most areas, the shading of the forest floor from adjacent unharvested trees surrounding these groups will promote higher levels of hemlock relative to spruce. The larger openings (closer to 2 acres) designed with a shape that minimizes forest “edge” (circular shape) located on southern exposures may result in levels of spruce similar to clearcuts. This will also vary by the proximity of the group to larger residual trees providing seed. Thinning in these openings will also increase the spruce levels by favoring them as leave trees.

Log Quality and Total Yield

Although log quality in second-growth stands is expected to be lower than in mature and over-mature stands even on sites that have been precommercially thinned, total yield per acre is expected to be higher in second-growth stands. The lower quality will be reflected in the log grades (sizes) with second-growth timber stands having fewer high grade logs than existing mature and over-mature stands. In addition, second-growth stands will have less volume in the larger diameter classes. Nevertheless, total yield will be significantly greater in second-growth stands than in mature and over-mature stands. The long-term result of precommercial thinning is the production of more usable fiber. Precommercial thinning also allows the option of reducing the rotation age. This is because merchantable size logs are produced sooner on thinned sites than in areas not thinned. An alternative to reducing the rotation age is to produce larger trees in the current or an extended rotation age. This will improve log quality somewhat in producing larger sizes of wood that are more valuable for saw timber.

Total yield per acre and log quality in second growth will vary by harvest method. Overstory removal will produce the highest second growth yield because of the advanced stage of the regeneration, however log quality may be reduced from logging damage. Clearcut with reserves will enable rapid growth rates with the potential to produce large trees. Trees with poor form and disease will be removed from the existing stand. Growth following group selection harvest may be lower than clearcut stands but will still be rapid near the center of the groups where competition from the edge does not dominate. Log quality will be less where competition reduces growth, and disease such as mistletoe remains in residual groups. Seed tree systems should result in some growth reduction directly below and adjacent to the seed trees left standing but should not be dramatic throughout the stand. Some damage to the seed trees may occur from logging.

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Structure

Most second-growth stands following clearcut harvest will exhibit less variation in tree diameter and height than the mature and over-mature stands they replace. At 100 years of age, average diameters for unmanaged second-growth stands will range from 10 inches on medium to 14 inches on high productivity sites (USDA Forest Service 1991). These diameters can be increased with precommercial and commercial thinning. Overstory removal, seed tree, and group selection will all produce stands with a wider variety of diameters in the second-growth stand. This is also true of the clearcut with reserves depending on the size and dispersal of the trees left in the stand. These systems should provide more structural diversity (wider range of tree heights and diameters) than traditional clearcut methods.

Cumulative Effects

As stated at the beginning of this chapter, we do not know if there will be any further harvest in the Project Area in the foreseeable future. That will be determined as a result of additional timber sale planning in the Sitka area. Consequently, at this time, no future harvest is projected in the Project Area for the cumulative effects analysis period (through year 2008). For this cumulative effects analysis we considered only those effects from this Project in its alternative forms, and the cumulative effects from previous timber harvesting and associated activities within the Project Area. Table 4-40 displays cumulative effects of timber harvest by alternative for the Project Area.

Table 4-40
Cumulative Acres Harvested by Alternative

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5 No Action
Previous Harvest Acres	12,196	12,196	12,196	12,196	12,196
Proposed Harvest Acres	1,739	2,501	1,889	3,262	0
Total Harvest Acres	14,025	14,787	14,175	15,548	12,196

Source: Mork 1995.

The harvest methods used have different effects on the resource. Although the majority of previous harvest acres were clearcut, some were selectively logged removing predominantly spruce. The proposed harvest acres encompass many different methods as well as amount of harvest within each stand. The most notable is group selection. This method will only harvest 20% of the acres within the stand at the initial entry. Eventually the entire stand would be harvested but the logging is staggered over 160 to 200 years. This means that 80% of the group selection acres are not planned to be harvested before the year 2008 (the projection of these cumulative effects). For purposes of this analysis, all previous and planned harvest acres are not differentiated by silviculture system for comparison. This presents the maximum total acres of harvest. The greatest difference in cumulative effects from harvest is between Alternative 4, with the highest level of proposed timber harvest, and Alternative 5, which defers all timber harvest.

The action alternatives propose to harvest from 8 to 10 percent of the total land base; from 21 to 23 percent of the total commercial forest land; and from 33 to 36 percent of the total tentatively suitable land in the Project Area. Thus, the cumulative effects of each action alternative on the timber resource in the Project Area can be considered nearly the same. Tables 4-41 through 4-45 display the cumulative effects by Alternative and by VCU.

Table 4-41
Alternative 1 - Acres of Forested Land Harvested (by VCU)

VCU	Past Harvest	Proposed Harvest	Total Harvest	Percent Cumulative Harvest		
				Tentatively Suitable (%)	CFL (%)	Land Area (%)
287	1,669	68	1,737	15	11	4
288	0	301	301	15	13	4
289	279	0	279	13	8	3
290	149	0	149	13	9	3
291	1,935	221	2,156	42	29	18
292	3,885	338	4,313	61	37	18
299	1,712	90	1,802	91	57	8
300	1,091	313	1,404	29	22	11
301	787	142	929	43	28	16
302	689	266	955	17	13	7
Total	12,196	1,739	14,025	30	20	7%

Source: Mork 1995

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Table 4-42
Alternative 2 - Acres of Forested Land Harvested (by VCU)

VCU	Past Harvest	Proposed Harvest	Total Harvest	Percent Cumulative Harvest		
				Tentatively Suitable (%)	CFL (%)	Land Area (%)
287	1,669	0	1,669	15	11	4
289	279	87	366	17	11	4
290	149	0	149	13	9	3
291	1,935	446	2,381	48	31	20
292	3,885	1,115	5,000	74	39	21
299	1,712	0	1,712	92	37	7
300	1,091	139	1,230	26	20	10
301	787	232	1,019	48	31	18
302	689	482	1,171	21	16	8
Total	12,196	2,501	14,697	36	23	10

Source: Mork 1995

Table 4-43
Alternative 3 - Acres of Forested Land Harvested (by VCU)

VCU	Past Harvest	Proposed Harvest	Total Harvest	Percent Cumulative Harvest		
				Tentatively Suitable (%)	CFL (%)	Land Area (%)
287	1,669	68	1,737	15	11	4
288	0	309	309	15	14	4
289	279	87	366	17	11	4
290	149	0	149	13	9	3
291	1,935	439	2,374	48	31	20
292	3,885	986	4,871	72	38	21
299	1,712	0	1,712	92	37	7
300	1,091	0	1,091	24	17	9
301	787	0	787	41	24	14
302	689	0	689	13	10	5
Total	12,196	1889	14,085	34	21	9

Source: Mork 1995

Table 4-44
Alternative 4 - Acres of Forested Land Harvested (by VCU)

VCU	Past Harvest	Proposed Harvest	Total Harvest	Percent Cumulative Harvest		
				Tentatively Suitable (%)	CFL (%)	Land Area (%)
287	1,669	68	1,737	15	11	4
288	0	309	309	15	14	4
289	279	87	366	17	11	4
290	149	0	149	13	9	3
291	1,935	445	2,380	46	32	20
292	3,885	1,182	5,067	73	44	21
299	1,712	90	1,802	91	57	8
300	10,91	368	1,459	30	23	11
301	787	232	1,019	48	31	18
302	689	482	1,171	21	16	8
Total	12,196	3,262	15,549	33	23	8

Table 4-45
Alternative 5 (No Action) - Acres of Forested Land Harvested (by VCU)

VCU	Past Harvest	Proposed Harvest	Total Harvest	Percent Cumulative Harvest		
				Tentatively Suitable (%)	CFL (%)	Land Area (%)
287	1,669	0	1,669	15	11	4
289	279	0	279	13	8	3
290	149	0	149	13	9	3
291	1,935	0	1,935	38	26	16
292	3,885	0	3,885	57	31	16
299	1,712	0	1,712	87	54	7
300	1,091	0	1,091	23	23	9
301	787	0	787	37	24	14
302	689	0	689	12	10	5
Total	12,196	0	12,196	30	19	8

Source: Mork 1995

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Financial Efficiency Analysis of Timber Harvest

The current Forest Service Handbook direction (USDA FSH 2409.18) requires a financial efficiency analysis for comparing benefits and costs of proposed timber sale projects. The analysis for the Northwest Baranof Project was conducted by subtracting estimated logging and transportation costs (including road construction) for an operator of average efficiency from the pond log value for each action alternative. Pond log values represent the market value for wood products minus the average manufacturing cost for those products.

Two methods were analyzed for comparison: 1) The midmarket assessment is designed to average the market fluctuations; and 2) The current value assessment is used to reflect the most current market conditions. The midmarket assessment used the weighted average of quarterly pond log values from 1980 through 1990. An allowance of 60 percent of normal profit and risk was also included as a cost and subtracted from the pond log values (USDA FSH 2409.18). The assessment provides estimates of the value of the timber under average market conditions. Actual (net stumpage) values would be higher under better-than-average market conditions and lower during poor market conditions.

The current value assessment was conducted to reflect recent market conditions. For this assessment, an allowance of 100 percent of normal profit and risk is included as a cost. In recent years, the actual selling values have been higher than average, therefore the current value assessment indicates higher values than the midmarket. An appraisal using current market conditions at the time of the timber sale will be conducted for actual values. It is assumed that the current value assessment is closer to the actual market value, however, the market may fluctuate significantly in short periods of time to produce much higher or lower values at the time of the sale. The results of the midmarket assessment and relative ranking of the action alternatives are displayed in Table 4-46, and the current value results are listed in Table 4-47. It is important to recognize that these values represent very preliminary approximations to be used for comparison of alternatives only.

Table 4-46

Financial Efficiency Analysis of Timber Harvest Midmarket Assessment (Dollars per mbf)

	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Sawlog Volume (mbf)	36417	51933	38808	66881
Sawlog + Utility (mbf)	44974	64249	48008	82697
Pond Log Value	\$357	\$354	\$354	\$355
Stump-to-Truck Cost ¹	\$200	\$234	\$239	\$ 231
Transportation Cost ²	\$ 72	\$ 66	\$ 62	\$ 80
Administration Cost ³	\$ 10	\$ 10	\$ 10	\$ 10
Temporary Development ⁴	\$ 26	\$ 14	\$ 16	\$ 23
Subtotal Logging Cost	\$308	\$324	\$327	\$ 344
Specified Road Cost ⁵	\$ 90	\$ 62	\$ 46	\$ 61
Total Harvest Cost	\$398	\$386	\$373	\$ 405
Profit and Risk Margin ⁶	\$ 51	\$ 53	\$ 54	\$ 53
Net Stumpage ⁷	-\$ 92	-\$ 85	-\$ 73	-\$ 103
Relative Ranking	3	2	1	4

Source: Winn 1995

¹ Includes falling, bucking, yarding, sorting, and loading costs.

² Includes road haul, dump, raft, water tow, and road maintenance costs.

³ Includes logging operations and overhead costs.

⁴ Includes temporary road construction, helicopter mobilization, and LTF costs.

⁵ Includes specified road construction, reconstruction, and bridge costs.

⁶ 60 percent of normal profit and risk.

⁷ Net Stumpage = Pond log value less total harvest costs less profit and risk.

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Table 4-47

Financial Efficiency Analysis of Timber Harvest Current Value Assessment (Dollars per mbf)

	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Sawlog Volume (mbf)	36417	51933	38808	66881
Sawlog + Utility (mbf)	44974	64249	48008	82697
Pond Log Value	\$512	\$505	\$505	\$506
Stump-to-Truck Cost ¹	\$217	\$248	\$253	\$244
Transportation Cost ²	\$ 73	\$ 67	\$ 63	\$ 82
Administration Cost ³	\$ 12	\$ 12	\$ 12	\$ 12
Temporary Development ⁴	\$ 26	\$ 15	\$ 17	\$ 23
Subtotal Logging Cost	\$328	\$342	\$345	\$361
Specified Road Cost ⁵	\$ 90	\$ 62	\$ 46	\$ 61
Total Harvest Cost	\$418	\$404	\$391	\$422
Profit and Risk Margin ⁶	\$ 92	\$ 94	\$ 96	\$ 95
Net Stumpage ⁷	\$ 2	\$ 7	\$ 18	-\$ 11
Relative Ranking	3	2	1	4

Source: Winn 1995

¹ Includes falling, bucking, yarding, sorting, and loading costs.

² Includes road haul, dump, raft, water tow, and road maintenance costs.

³ Includes logging operations and overhead costs.

⁴ Includes temporary road construction, helicopter mobilization, and LTF costs.

⁵ Includes specified road construction, reconstruction, and bridge costs.

⁶ 100 percent normal profit and risk

⁷ Net Stumpage = Pond log value less total harvest costs less profit and risk.

Variances in volume per acre, species mix, logging systems, log haul distance, road construction and reconstruction costs, LTF construction costs, and profit and risk allowances affect both the pond log values and logging and transportation costs for each alternative. Although individual units may not be economical to harvest by themselves, the management of less productive land or land containing a high percentage of defective timber will help to increase the future timber yields. The harvest of units with higher returns will help compensate for those that are less economical.

Based on this preliminary analysis, Alternatives 1, 2, and 3 would result in positive net stumpage values at current market values and would be considered economical offerings if sold today. The negative midmarket values for these alternatives indicate that they may be uneconomical based on average market values. Therefore, depending on the market values at the time of the timber sale, Alternatives 1, 2, and 3 may or may not be economical. Alternative 4 resulted in negative stumpage values using both the midmarket and the current value assessment. The assessment indicates that it is not likely

this alternative would result in an economical offering for an operator of average efficiency. Alternative 4 proposes the most volume to be harvested with the highest capital investment. These investments include the most new specified road construction and development of a new LTF barge site. Although these costs cause the net stumpage values to be negative, the future use of these investments would likely reduce the costs of future entries.

The major factors affecting net stumpage values among the action alternatives are transportation costs (hauling), temporary developments (LTF construction and temporary road construction), and specified road construction costs. Alternatives with longer haul distances, more miles of road construction, and higher LTF construction costs yield the lowest net stumpage values. There is a direct relationship between the extent of helicopter yarding proposed for an alternative and the stump-to-truck costs. The cost increases however, are more than offset by lower costs for hauling, and road and LTF construction costs. This is illustrated in Table 4-46 and Table 4-47 which show the highest stump-to-truck cost in Alternative 3 which has the highest net stumpage value. This alternative has the highest proportion of helicopter harvest, and the lowest amount of new road construction.

Hunting, Fishing, and Subsistence

Hunting

Wildlife available for hunters and trappers could be affected by the proposed action in the following ways: (1) reduced habitat capability could decrease availability over time; (2) new roads could increase competition for wildlife through improved access; (3) the presence of resident logging camps could temporarily increase demand for wildlife; and (4) hunters could be temporarily displaced from habitual hunting areas during logging activities. The principal species sensitive to management activities and over harvesting are Sitka black-tailed deer, brown bear, marten, and mountain goat.

Because actual wildlife populations data are not available, we calculate an estimated population (Habitat Capability) using habitat capability models. Although the models were not designed to be used in this manner, it is the best methodology available.

Habitat capabilities for Wildlife Analysis Areas (WAAs) were compared to average harvest levels reported by ADF&G to determine if existing or resulting habitat capabilities are adequate to meet hunter demand. Habitat capabilities were calculated for the entire WAA so that they could be compared to ADF&G's harvest numbers which are reported by WAA. This comparison is shown in Tables 4-48 through 4-51. The effects on hunting are detailed in the subsistence discussion.

Fishing

As stated in the Fisheries section of this chapter, the application of BMPs and TTRA buffer strips are expected to result in no quantifiable effect to salmon and trout spawning and rearing habitat from logging and road building. In general, the large streams at the heads of bays and the low elevation lake near Nakwasina Passage will receive the majority of freshwater recreational fishing pressure under all alternatives. Steelhead trout is the species most susceptible to fishing pressure in the Project Area. Current sport fishing regulations allow anglers to keep one steelhead (minimum length 36 inches) per day, with a total of two fish annually. Although the presence of logging camps may increase fishing pressure on the freshwater streams and lakes in the area, the conservative steelhead strategy and the bag limits set for other species coupled with the short duration of camp occupancy will minimize the effects on fish populations under each alternative. Although road construction will provide increased access to lakes and streams in the area for recreational fishers, bag limits are expected to control the effects on fish populations.

Executive Order 12962 of June 7, 1995, directs Federal agencies to conserve, restore, and enhance aquatic systems to provide for increased recreational fishing opportunities nationwide. Section 1 of the Executive Order is most pertinent to the proposed activity. Section 1 directs Federal agencies to evaluate effects on aquatic ecosystems and recreational fisheries, develop and encourage partnerships, promote restoration, and provide access and promote awareness of opportunities of recreational fishery resources.

The effects of the alternatives have been evaluated throughout this EIS, including effects to aquatic ecosystems and recreational fisheries.

Partnerships are continuing to be used to leverage Federal project funds to address water quality concerns along the Nelson Logging Road at Starrigavan Creek, to construct trails and shelters to view spawning fish, to plan a saltwater fishing pier, and to construct an ORV trail. Depending on road management objectives and interest by user groups, similar partnerships may also be possible in the Project Area, although none have been proposed for recreational fisheries.

As discussed elsewhere in this document and in the Fisheries Resource Inventory Report (Lorenz 1993), watershed restoration has been conducted in the Project Area since 1987. Projects have been completed within portions of the Rodman River, Adams Creek, and Fish Creek drainages. Planning has begun for watershed scale restoration at Noxon Creek and Fish Creek. The Sitka Ranger District will analyze watershed conditions from the landscape level to specific sites, focusing on hydrologic, biologic, and topographic features of the watershed. Restoration efforts seek to restore ecological processes impacted by prior human actions. A similar large scale effort is nearing completion at Starrigavan Creek. These restoration efforts are targeted on ecological processes, and will ultimately improve fisheries habitat and water quality.

Subsistence

This evaluation of the use of subsistence resources in the Project Area will result in two determinations. There will be one determination of the direct effects of the action alternatives on subsistence resources of the Project alone. The second determination will include the effects of past, present, and future timber harvest activities on subsistence resources within the Project Area.

Section 810 of the Alaska National Interest Lands Conservation Act (ANILCA) requires a Federal agency having jurisdiction over lands in Alaska to evaluate the potential effects of proposed land-use activities on subsistence uses and needs. Section 810 of the ANILCA states:

In determining whether to withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of public lands under any provision of law authorizing such actions, the head of the agency having primary disposition over such lands or his designee shall evaluate the effects of such use, occupancy, or disposition on subsistence uses and needs, the availability of other lands for purposes sought to be achieved, and other alternatives which would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes. No such withdrawal, reservation, lease, permit, or other use, occupancy or disposition of such lands which would significantly restrict subsistence uses shall be effected until the head of such Federal agency:

- gives notice to the appropriate State agency and appropriate local committees and regional councils established pursuant to the ANILCA Section 805;
- gives notice of and holds a hearing in the vicinity of the area involved; and
- determines that: such a significant restriction of subsistence uses is necessary, and consistent with sound management principles for the utilization of the public lands; the proposed activity will involve the minimal amount of public lands necessary to accomplish the purposes of such use, occupancy, or other

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disposition; and reasonable steps will be taken to minimize adverse impacts upon subsistence uses and resources resulting from such action.

A proposed action shall be considered to significantly restrict subsistence uses if after any modification warranted by consideration of alternatives, conditions, or stipulations, it can be expected to result in a substantial reduction in the opportunity to continue subsistence uses of renewable resources. Reductions in the opportunity to continue subsistence uses generally are caused by reductions in abundance of or major redistribution of resources, substantial interference with access, or major increases in the use of those resources by nonrural residents. The responsible official must be sensitive to localized, individual restrictions created by any action and make a decision after a reasonable analysis of the information available.

Significant restrictions are differentiated from insignificant restrictions by assessing whether the action undertaken shall have no or slight effect as opposed to large or substantial effects. In further explanation the Bureau of Land Management (BLM) Director states that no significant restriction results when there would be "no or slight" reduction in the abundance of harvestable resources and no occasional redistribution of these resources. There would be no effect (slight inconvenience) on the ability of harvesters to reach and use an active subsistence harvesting site, and there would be no substantial increase in competition for harvestable resources (that is, no substantial increase in hunting by nonrural residents).

Conversely, restrictions for subsistence uses would be significant if there were large reductions in abundance or major redistribution of these resources, substantial interference with harvestable access to active subsistence-use sites or major increases in nonrural resident hunting. In light of this definition, the finding of significant restriction must be made on a reasonable basis, since it must be decided in light of the total subsistence lands and resources that are available to individuals in surrounding areas living a subsistence lifestyle. The EIS evaluates the availability of subsistence resources in surrounding areas that could be accessed without undue risk or economic hardship to subsistence users.

Our evaluation determines whether subsistence uses in the Project Area or portions of the Project Area may be significantly restricted by any of the proposed action alternatives. This evaluation considers the availability of subsistence resources in the surrounding areas, the cumulative impacts of past and foreseeable future activities on subsistence users and resources, and the potential cultural and socioeconomic implications affecting subsistence users. The evaluation incorporates the mapped subsistence use areas in the Project Area. The evaluation uses wildlife habitat capability models as well as ADF&G hunter survey data. Additional information about the subsistence evaluation is included in Appendix G.

We evaluated the effects of the proposed alternatives using these criteria:

- changes in distribution or abundance of subsistence resources,
- changes in access to subsistence resources, and
- changes in competition from nonsubsistence users for those resources.

Distribution & Abundance

Sitka Black-tailed Deer

The potential effects on deer habitat capability were evaluated. The habitat capability model projects that a 0.4 to 1.6 percent reduction in deer habitat capability may be expected from the proposed timber harvest alternatives. These small percent reductions are not significant because they are within the accuracy of the models. The proposed timber harvest action alternatives do not show a significant reduction in habitat capability from present conditions.

The sustainable harvest level for deer is estimated to be 10 percent of the population per year (Flynn and Suring 1989). Using this and the average yearly harvest for 1987-1993, we calculated the needed deer population for a sustainable harvest. We then compared this sustainable harvest population to the habitat capability for Sitka black-tailed deer as determined by the model. The estimated habitat capability does not appear sufficient to support a population capable of sustaining the average level of deer harvest from 1987 to 1993. Projected habitat capabilities are less than the population needed to support harvest for all WAAs except WAA 3313 (see table 4-48), and will not meet the projected increasing demand from subsistence and sport hunters.

Table 4-48

Average Harvest of Sitka Black-tailed Deer and Population Needed to Support Harvest Compared to Estimated Habitat Capability by Alternative

WAA*	Average Deer Harvest 1987-93	Deer Population Needed to Support Harvest	Habitat Capability by Alternative*				
			Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5 No Action
3001	699	6,990	3,769	3,767	3,790	3,759	3,790
3312	129	1,290	473	478	472	472	479
3313	136	1,360	1,739	1,709	1,713	1,707	1,753
3314	132	1,320	946	948	946	946	948
Total	1,096	10,960	6,927	6,902	6,921	6,884	6,970

Source: Hartmann 1995. Note: Population needed to support harvest assumes a 10 percent harvest of the population per year. * Includes portions of WAA outside the Project Area.

The Federal Subsistence Board may use its authority to regulate nonrural harvest of deer and has authority to prioritize the harvest of deer among rural residents when necessary to protect the resource. This type of action, as prescribed by the ANILCA, Section 804, may be necessary to ensure the availability of adequate abundance of deer needed by the rural communities using the Project Area whether or not the proposed actions are implemented. The current deer population level does not necessarily require restrictions on nonrural users. During 1991, non-subsistence users were restricted from hunting,

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subsistence season length was reduced 30 days (15 percent) and bag limits were reduced by 2 deer ($33\frac{1}{3}$ percent). Future season and bag limit changes to accommodate deer abundance will depend on the extent and duration of the winter weather. Additional factors that will be considered are the condition of remaining deer and the condition of the winter range following the high winter mortality.

When some of these die-offs have occurred, ADF&G and the Federal Subsistence Board have implemented reduced season lengths, reduced bag limits, season closures, or some combination of season and bag limit restriction. These hunting restrictions were intended to speed the recovery of the depressed populations. It is assumed that this pattern will continue into the future. It is also characteristic that the populations recover fairly rapidly and the restrictions have been relatively short-lived.

Hunting effort and hunter success is also affected following periods of high deer mortality in addition to reduced seasons and bag limits (Thornton 1992). When local deer populations declined, fewer residents engaged in hunting, and hunters traveled farther.

Table 4-49 shows the mean deer harvest for 1987 through 1992 for Project Area WAAs by rural and nonrural communities and shows percentage of the deer harvested in each WAA by rural and nonrural communities. It is assumed that the 1987 to 1992 mean deer harvest reflects rural and nonrural community use of deer in Project Area WAAs. ADF&G has collected deer harvest data for individual WAAs since 1987. Averaging the deer harvest makes allowance for factors which influence deer numbers and hunting activity from year to year such as weather patterns, access, habitat capability, and hunting success. Overall, nonrural residents harvest an average of only 5 percent of the deer harvested in the Project Area.

Table 4-49

Mean Deer Harvest for 1987 through 1992 for Project Area WAAs by Rural and Non-rural Communities

WAA	Deer Harvested		Total	Percent Harvested	
	Rural	Nonrural		Rural (%)	Nonrural (%)
3001	509	18	527	97	3
3312	139	2	141	99	1
3313	123	16	139	88	12
3314	116	13	129	90	10
Total	887	49	936	95	5

Source: Hartmann 1995. Derived from ADF&G deer harvest data for Southeast Alaska, Thornton 1993.

The alternatives, ranked from the lowest to the highest impact on deer habitat capability are 5, 1, 3, 2, and 4. Residents of Sitka harvest 90 percent of the deer that are harvested in the Project Area. Sixteen other communities harvest a total of ten percent of the deer

harvested. None of these communities harvest more than 1% of the deer from the Project Area. In the Project Area, Sitka residents most heavily use those areas closest to Sitka, including Nakwasina Passage, Neva Strait, and St. John Baptist Bay. Alternative 3 avoids these areas completely. Alternative 2 has no harvest proposed for VCU 299 and 300 in Nakwasina Passage. Alternative 4 proposed the most harvest for this area followed by Alternative 1.

Brown Bear

The Project Area is within GMU 4. Rural residents within GMU-4 and the residents of Kake are allowed to harvest brown bear for subsistence purposes. Others may harvest brown bear under State regulations. Federal subsistence regulations state that a person taking a brown bear for subsistence use in Southeast Alaska must salvage both the hide and the edible meat of a brown bear. Brown bear are generally not considered a food source, but limited use is made of parts of the bear for cultural purposes. Most of the brown bear taken in the Project Area are considered sport harvest (ADF&G harvest data).

An average of nine brown bears, representing approximately 2.5 percent of the existing population (estimated from habitat capability), were harvested per year in the Project Area WAAs between 1980 and 1993. The sustainable harvest level for brown bears is variable depending on the suitability of habitat conditions, but is generally considered to be 4 percent.

Table 4-50 indicates that brown bear abundance under all alternatives will be sufficient to sustain the 1980 to 1993 average harvest in Project Area WAAs.

Table 4-50
Average Harvest of Brown Bear and Population Needed to Support Harvest Compared to Habitat Capability by Alternative

WAA*	Average Bear Harvest 1987-93	Bear Population Needed to Support Harvest	Habitat Capability by Alternative*				
			Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5 No Action
3001	2	50	94	94	95	94	95
3312	1	25	27	27	27	27	27
3313	3	75	92	92	92	91	92
3314	1	25	51	51	51	51	51
Total	7	175	264	264	265	263	265

Source: Hartmann 1995. Note: Population needed to support harvest assumes a 4 percent harvest of the population per year. * Includes portions of WAA outside the Project Area.

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Mountain Goat

According to the habitat capability model, habitat capability for mountain goat does not appear to be sufficient to support a population capable of sustaining the average harvest level from 1987 to 1993 under any of the alternatives (Table 4-51). However, in a September 1994 goat survey Jim Faro (ADF&G Wildlife Conservation Division) counted approximately 370 goats in Project Area WAAs (Faro 1995). Not all of the Project Area was included in this aerial survey. Goat surveys conducted in recent years indicate that the Baranof herd is expanding. Based on recent goat counts and an expanding herd, it appears that the model is under-representing the current population. The actual population is well above what the habitat capability models would predict. Jim Faro (personal communication) feels that 7 to 10 percent of the goat population could be harvested for conservative management, and this level of harvest would maintain goat population levels and allow for continued growth. There will be no measurable change in alpine/subalpine habitats (habitats important to goats) by the proposed actions. Even with reduction in habitat capability, the actual population will support the current harvest. However, measures may need to be taken to restrict access on constructed or reconstructed roads, especially in VCU 300.

Table 4-51

Average Harvest of Mountain Goat and Population Needed to Support Harvest Compared to Habitat Capability by Alternative

WAA*	Average Goat Harvest 1987-93	Goat Population Needed to Support Harvest	Habitat Capability by Alternative*				
			Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5 No Action
3001	13	186	50	49	51	49	51
3312	<1	14	0	0	0	0	0
3313	1	14	23	23	23	23	23
3314	2	28	7	7	7	7	7
Total	17	242	80	79	81	79	81

Source: Hartmann 1995. Note: Population needed to support harvest assumes a 7 percent harvest of the population per year. * Includes portions of WAA outside the Project Area.

Marten

Marten are presently being trapped in the Project Area. Approximately 1 percent of the trappers that reported harvest in the Project Area are from communities other than Sitka.

A decrease in local marten distribution is expected when second growth in harvested units reach 25 years old. Timber harvest and regrowth alter marten habitat-use patterns.

Table 4-52 indicates that marten habitat capability under all alternatives will be sufficient to sustain the 1984 to 1993 average harvest of 29 marten. In fact, there would be habitat capable of supporting a harvest of at least 212 marten with any of the alternatives.

Table 4-52

Average Harvest of Marten and Population Needed to Support Harvest Compared to Habitat Capability by Alternative

WAA*	Average Marten Harvest 1987-93	Marten Population Needed to Support Harvest	Habitat Capability by Alternative*				
			Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5 No Action
3001	29	74	171	170	173	170	173
3312	16	40	36	37	36	36	37
3313	29	73	134	131	131	130	136
3314	10	25	70	70	70	70	70
Total	84	212	488	485	487	483	493

Source: Hartmann 1995. Note: Population needed to support harvest assumes a 40 percent harvest of the population per year. * Includes portions of WAA outside the Project Area.

Waterfowl

Timber harvest unit locations generally avoid important waterfowl areas. The estuary grass flats, beach fringe, and borders of inland lakes and streams would remain largely unaffected. Less than 1 percent of the beach fringe, estuary fringe, and riparian habitat will be impacted by proposed roads and units.

Marine Mammals

Federal law prohibits the taking of marine mammals by anyone other than Native hunters. There is no evidence that timber harvest activities have had any effects on marine mammals taken for subsistence or their habitat. There are no foreseeable impacts from the proposed actions on marine mammals.

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Salmon

Salmon are a major subsistence food harvested in the Project Area. The Fisheries analysis of this chapter concludes that with the application of BMPs and TTRA buffer strips, no quantifiable effects are expected on salmon spawning and rearing habitat. All salmon spawning and rearing streams (Class I) near proposed timber harvest units are protected by buffers of at least 100 feet as prescribed in the TTRA. In addition, specific prescriptions for protecting salmon habitat are incorporated if needed during the layout of harvest units and roads (see Appendix N, Unit Cards; and Appendix O, Road Cards).

Based on the implementation of site-specific prescriptions developed during interdisciplinary meetings for protecting salmon spawning and rearing habitat, the EIS projects that the immediate and foreseeable effects on the abundance and distribution of salmon for subsistence uses in the Project Area would be too small to measure.

Other Finfish

The proposed project would have no immediate or foreseeable effect on other finfish habitat. Because there would be no effect on other finfish habitat, the abundance and distribution of other finfish would not be affected.

Shellfish

Based on the limited impact the proposed LTF sites have on marine and estuarine habitat, crabs, and bottom dwelling organisms, the effect on the abundance and local distribution of crabs, clams, and other shellfish would be too small to measure for subsistence purposes. The projected foreseeable effects would be too small to measure.

Other Food Resources

Other foods include plants such as kelp, goose tongue, berries, etc. Most traditional other food gathering occurs near beach and estuarine areas. Proposed roads in action alternatives may infringe upon areas potentially used for gathering other foods if gathering extends beyond the 500-foot beach fringe buffer. Road construction would improve access to berry picking sites that are now not easily accessible.

Since beach fringe and estuaries will not be significantly impacted by the proposed timber harvest and additional food gathering sites will be more accessible, we don't expect to have substantial negative affects on the abundance and distribution of other foods.

Firewood

The Forest Service has a free-use policy for firewood and timber. None of the proposed alternatives are expected to have an adverse effect on the availability of firewood and personal-use timber. In fact, all action alternatives would increase availability of free use firewood and timber both during and after harvest.

Access

Traditional access to the Project Area for subsistence use is by boat. Most subsistence activities occur in the beach fringe. Access to historical subsistence-use areas may be affected where logging activities (such as LTFs and logging camps) are located in the beach fringe. The effect on access would probably be minor under all alternatives because less than one percent of the beach fringe and estuary fringe habitat will be impacted by logging activities.

Road construction would improve hunter and trapper access to the Project Area. Improved road access may result in greater hunter success for deer, goat, and bear, and marten populations. Miles of road proposed for construction are shown in Table 4-62. Road access would favor harvest by logging camp residents and road construction crews who may have motorized vehicles available during the time camps are active. Off-road vehicles (ORVs) could be transported to the Project Area by boat and used for hunting and subsistence purposes. Residents from nearby communities, especially Sitka are expected to use the roads for hunting.

If traffic levels were to become high enough, wildlife travel patterns could be altered by ORV use. These effects can be mitigated through the use of RMOs to set the levels of road maintenance and control the patterns of vehicular use. RMOs developed for Project Area roads take subsistence uses into consideration. Planned RMOs for the Project Area vary by alternative (see Appendix D for a listing of RMOs). RMO prescriptions are not static; they can be changed by the District Ranger, if necessary, to better manage wildlife and other resources. Through the use of RMOs we do not expect ORV use to significantly impact resident game populations.

The activities of the action alternatives alone do not present a significant restriction in access. Access to subsistence deer in the interior of the island will increase.

Competition

Competition for subsistence resources in the Project Area is a concern to residents of Sitka and other subsistence users. Displacement of Sitka hunters could occur from logging camp residents on subsistence resources. Some future residents of the logging camps would be subsistence users. It is possible, though, that some camp residents would be Alaska nonresidents and nonrural residents. Most nonrural residents and Alaska nonresidents are employed seasonally by the logging companies and may leave prior to peak hunting times in late October through December thus reducing their impact on subsistence resources.

There are no foreseeable restrictions on the harvesting of salmon, finfish, shellfish, or other food resources of subsistence users because of sport and non-rural competition for these resources. Any increase in competition from nonrural residents and Alaska nonresidents would not be substantial because of the availability of resources in the immediate vicinity and in the surrounding areas.

Household use of specific areas may be temporarily displaced by some of the proposed actions. Generally, there are sufficient lands available elsewhere within or outside the Project Area for subsistence gathering. Any displacement that may occur is likely to be to

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other areas within a household's or community's historical range of use. Furthermore, any displacement that may occur would likely be temporary until logging activities within the Project Area conclude in three to five years.

The activities of the action alternatives alone do not present a significant restriction due to competition between subsistence and non-subsistence hunters.

Project Alone Findings of Effects on Subsistence Resources

(1) The potential foreseeable effects from the action alternatives in the Northwest Baranof Project do not present a significant possibility of a significant restriction of subsistence uses of brown bear, furbearers, marine mammals, waterfowl, salmon, other finfish, shellfish, and other foods.

(2) The activities of the action alternatives by itself do not present a significant restriction to subsistence use of deer. The project's specific effects on subsistence use of deer are minimal. Analysis of the action alternatives projects a reduction in deer habitat capability of less than 2 percent in Project Area WAAs, access to subsistence deer in the interior of the island will increase, and competition between subsistence and non-subsistence hunters is not expected to increase.

Cumulative Effects

This EIS evaluates the cumulative effects on subsistence practices in the Project Area and other Forest Service lands associated with continued implementation of the TLMP. The evaluation of cumulative effects for subsistence resources determines whether or not past, present, or future activities may restrict subsistence uses and identifies the rural communities that use the Project Area that would be most affected by a restriction.

Our analysis indicates that the potential foreseeable effects do not indicate a significant possibility of a significant restriction for any subsistence resource except deer.

Deer Abundance and Distribution

The cumulative harvest of timber would decrease the habitat capability of deer. The changes in habitat capability could decrease their abundance and distribution. Four types of impacts would result from clearcutting old-growth forest (Hanley 1984):

- logging slash makes it difficult for deer to pass through clearcuts, and reduces available habitat;
- lack of snow interception in clearcuts reduces the availability of forage during winter;
- the nutritional quality of plants growing in open sunny clearcuts would be lower than plants growing in shaded old-growth forests; and
- forage production would be significantly reduced following canopy closure of the regenerating forest (20 - 30 years after clearcutting), and would remain low for at least 100 years.

The estimated number of deer available for harvest is sufficient to meet current subsistence and non-subsistence demands only in WAA 3313. None of the WAAs,

however, will meet the future projected increase in demand for subsistence. Future reductions in habitat capability and corresponding deer populations resulting from timber harvest may exacerbate the potential conflict between subsistence harvest and non-subsistence harvest of deer in the Project Area.

Access to Deer

Access to customary subsistence areas is not expected to be significantly affected by any of the action alternatives. Access to interior deer hunting areas currently not used for subsistence is expected to increase as a result of road building associated with the Project. These roads will provide greater access to deer primarily for subsistence hunters. No significant restrictions in access to deer by subsistence hunters is anticipated for any of the alternatives.

Competition for Deer

Little or no increase in competition between subsistence hunters and non-rural non-subsistence deer hunters is anticipated due to the subsistence priority established by ANILCA.

Actions on other lands surrounding the Project Area could also affect the abundance or distribution, access to, and competition for the subsistence resources harvested by the rural communities using the Project Area. Table 4-53 displays the other timber sale projects in progress or being planned in the vicinity of the Northwest Baranof Project. Enough is known about foreseeable activities on other lands surrounding the Project Area to project that subsistence use of deer may be significantly restricted in the future.

Table 4-53
Timber Sale Projects in the Vicinity

Project	Location	ROD Date
Kelp Bay	Baranof Island (northeast side)	1992
Southeast Chichagof	Chichagof Island (southeast side)	1992
Ushk Bay	Chichagof Island (southwest side)	1994

Source: Forest Service 1995

Cumulative Findings for Subsistence Use of Deer

Each of the alternatives may have a significant possibility of a significant restriction of subsistence use of Sitka black-tailed deer by the residents of Sitka (Table 4-54).

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Table 4-54
Significant Possibility of a Significant Restriction on Subsistence Use of Sitka Black-tailed Deer

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5 No Action
Abundance or Distribution	Yes	Yes	Yes	Yes	Yes
Access	No	No	No	No	No
Competition	No	No	No	No	No

Note: "No" indicates an insignificant possibility of a substantial effect. "Yes" indicates a significant possibility of a substantial effect. Source: Hartmann 1995.

Determinations

Section 810 (a) (3) of the ANILCA requires that when a significant restriction may occur, determinations must be made in regard to whether:

- such a significant restriction of subsistence uses is necessary, consistent with sound management principles for the utilization of public lands;
- the proposed activity will involve the minimum amount of public lands necessary to accomplish the purposes of such use and occupancy, or other disposition;
- reasonable steps will be taken to minimize adverse impacts upon subsistence uses and resources resulting from such actions.

Necessary and Consistent with Sound Management of Public Lands

The action alternatives have been examined to determine whether the associated potential restriction to subsistence use is necessary, consistent with the sound management of public lands. Standards used for the review include (1) the National Forest Management Act of 1976 and its implementing regulations; (2) the Alaska National Interest Land Conservation Act (ANILCA) 1980; (3) The Alaska Regional Guide (1983); (4) the Tongass Land Management Plan and Draft Review; (5) the Tongass Timber Reform Act (TTRA) 1990; (6) the Alaska State Practices Act; (7) the Alaska Coastal Management Program; (8) Multiple Use Sustained Yield Act (1960); (9) Subsistence Management and Use Handbook (1985); and (10) Subsistence Evaluation and Finding, FSH 2609.25 (revision 1988).

The ANILCA placed an emphasis on the maintenance of subsistence resources and lifestyles. However, the act also provided for adequate opportunity for satisfaction of the economic and social needs of the State of Alaska and its people and recognized public lands necessary and appropriate for more intensive uses. The Act requires the Forest Service to make available for harvest 4.5 billion board feet of timber per decade from the Tongass National Forest. The TTRA removed the 4.5 billion board foot requirement from ANILCA, but directed the Forest Service to seek to meet market demand for timber to the

extent consistent with providing for multiple use and sustained yield of all renewable forest resources, and subject to applicable law.

The Project is necessary as a component of the timber management program designed to implement the Forest Plan and to meet TTRA direction. There is currently a very strong market demand for timber, a limited timber supply from other sources, and a underutilized mill capacity in the region. Current timber market analysis indicates that the timber demand exceeds timber supply. The timber volume provided by the Project will best help to bridge that gap. This volume is provided as a component of the 10 year timber sale schedule which attempts to provide timber to industry in an even flow over the planning cycle. The timber volume is also a substantial component of the timber sale program to be offered in 1996 on the Chatham Area to meet the annual market demand. Timber volume from other areas of the National Forest is not readily available to replace this volume within a reasonable time frame.

The project, through the implementation of an action alternative, best meets the objectives of the Forest Plan and TTRA direction while also providing protection measures for forest resources. It is consistent with the Forest Plan and laws, regulations, policies, public needs, and the capabilities of the land.

Based on a review of the subsistence hearing testimony and the analysis conducted in the Final EIS, it is apparent that all of the action alternatives involve some potential impact to subsistence deer use in the future. Based on the analysis of the information presented in this document on the proposed alternatives, and on the guidance provided by the document listed above, these actions are considered necessary, consistent with sound management of public land.

Amount of Public Land Necessary to Accomplish the Purpose of the Proposed Action

Much of the Tongass National Forest is used by one or more rural communities for subsistence purposes for deer hunting. The areas of most subsistence use are the areas adjacent to existing road systems, the beaches, and the areas in close proximity to communities. Within the Project Area, the extent and location of the subsistence use area precludes complete avoidance. Areas other than subsistence use areas that could be harvested may be limited by other resource concerns such as: soil and water protection; high value wildlife habitat; economics; visuals; or unit and road design. Effort was made to protect the highest value subsistence areas. For example, beach fringe is one of the highest use subsistence areas. No harvest units extend into the beach fringe, and less than one percent of the beach fringe habitat will be impacted by proposed roads.

The impact of viable timber harvest projects always includes alteration of old-growth habitat which in turn always reduces projected habitat capability for old-growth-dependent subsistence species. It is not possible to reduce harvest in one area and concentrate it in another without impacting one or more rural communities' important subsistence use areas. In addition, harvestable populations of game species could not be maintained in a natural distribution across the Forest if harvest were concentrated in specific areas. A well distributed population of species is also required by the Forest Service regulations implementing the NFMA.

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Reasonable Steps to Minimize Adverse Impacts Upon Subsistence Uses and Resources

Reasonable steps to minimize impacts on subsistence have been incorporated in development of the alternatives and project design criteria. During development of alternatives, an effort was made to minimize activities that could adversely impact important subsistence use areas. Project design criteria called for locating roads and units outside of important subsistence use areas such as the beach fringe, estuary fringe, and riparian areas adjacent to salmon streams. Units were assigned an importance rating based on inputs from many sources, including ADF&G Divisions of Subsistence, Habitat Conservation, and Wildlife Conservation; Sitka Fish and Game Advisory Board; Sitka Tribe of Alaska; and Sitka Conservation Society. These ratings were taken into consideration as alternatives were developed. For example, Alternative 3 avoids the majority of the highest valued subsistence areas.

Summary of Determinations

The Record of Decision (ROD) for the Final EIS for the Northwest Baranof Project includes a final determination about the significant restriction on subsistence use that may result from implementation of the selected alternative. Below is a summary of the EIS evaluation and findings.

(1) The potential foreseeable effects from the action alternatives in the Northwest Baranof Project or cumulative effects do not present a significant possibility of a significant restriction of subsistence uses of brown bear, furbearers, marine mammals, waterfowl, salmon, other finfish, shellfish, and other foods.

(2) The activities of the action alternatives alone do not present a significant restriction to subsistence use of deer. The project's specific effects on subsistence use of deer are minimal. The action alternatives project a reduction in deer habitat capability of less than 2 percent in project WAAs, access to subsistence deer in the interior of the island will increase, and competition between subsistence and non-subsistence hunters is not expected to increase.

However, there is a significant possibility of a significant restriction of subsistence use of deer when the action alternatives together with other past, present, and reasonably foreseeable actions are considered in a cumulative manner. This is due to human population growth projected to occur independent of whether the selected alternative is implemented, and the cumulative reductions of habitat capability from past harvests.

(3) For the other communities with historic use of the Project Area WAAs, there is sufficient habitat capability to meet subsistence needs through the year 2008 elsewhere in their hunting areas.

Recreation and Scenic Quality

Recreation

Not all people desire the same experience or require the same setting for their recreation activities. If a person desires a primitive recreation experience, often the visual setting may be paramount. Although impacts to the visual environment can influence recreation, this relationship is not necessarily direct. The desire for a particular setting is personal and varies from one individual to another. At one extreme, individuals will demand an untouched setting and no contact with people outside of their group. These people often want the area where they recreate to be difficult to access with no human made items present other than what they themselves bring into the area. This type of experience fulfills a desire to be independent and gives a feeling that the experience has greater value because of the amount of work necessary to access the area. At the other end of the spectrum is the person who desires to have lots of contact with other people, who finds ease of access mandatory, and who wants creature comforts. Even at this extreme the person may or may not find visual setting secondary to these social and comfort needs. Much of the tourism industry in Southeast Alaska relies heavily on the visual resources, yet extremely comfortable living and traveling conditions are provided. Other recreationists may find all visual, social, and comfort settings secondary to other experiences. Examples of this can be dedicated hunters, fishermen, and skiers. To these individuals all other things may be secondary to bagging their trophy or conquering another slope.

Although setting may not be important to everyone, some generalizations can be made about the usual settings where different types of recreation occur. For this reason, one method for analyzing the consequences of actions on recreation and tourism is based on changes in recreation setting. Setting changes in any alternative would result in a change in the recreation opportunities and experiences available in the area.

A second method to address the effects is the change which might occur in the physical or social characteristics of specific Recreation Places (see Chapter 3, Recreation, or the Glossary for more information on Recreation Places). It is these specific inventoried places and the quality of their settings that constitute a large portion of the recreation opportunities in the Project Area. Therefore, the degree of change in the size, setting, and recreation opportunities available in a Recreation Place is an important measure of the effect of an alternative on the recreation resource.

Recreation Setting

Each alternative for the Northwest Baranof Project provides a unique blend of settings for recreation opportunities, activities, and experiences. Setting differences due to varying amounts and distribution of timber harvest and/or road construction may influence the recreational experience that a forest visitor has and, as a result, also affect overall satisfaction.

All action alternatives shift the recreation setting from the more natural towards the more modified. The amount and location of this shift varies by alternative. Previously non-

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roaded areas and areas not adjacent to old cutting units may undergo the greatest change in setting. These changes will have a negative impact on those individuals seeking recreation in a natural setting and may have a positive impact on those who want or need roads for their recreational activities. Setting changes will most likely cause different recreational users to visit the area. The activities in which they participate, and the recreational experiences that they have, will also change.

Where roads are built and units are harvested, the setting changes from natural to modified. The presence of roads and units can also influence nearby areas and change them to a modified setting. To compare alternatives, we determined the acres of setting change. In addition, since most recreation in the Project Area is marine based and occurs in areas immediately adjacent to the saltwater, comparison of the miles of shoreline setting for each alternative provides further insight to the effects of setting change on recreation. Table 4-55 shows the acres of recreation setting by alternative. Table 4-56 shows the miles of shoreline setting by alternative.

Table 4-55
Recreation Setting Acres by Alternative

VCU	Natural Acres					Modified Acres				
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5 No Action	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5 No Action
287	38,409	38,708	38,398	38,387	38,708	3,983	3,684	4,003	4,005	3,684
288	5,384	7,126	5,381	5,383	7,126	1,742	0	1,745	1,743	0
289	8,537	8,247	8,247	8,247	8,560	23	313	313	313	0
290	5,262	5,262	5,262	5,262	5,262	0	0	0	0	0
291	7,836	7,200	7,223	6,935	8,290	4,174	4,810	4,787	5,075	3,720
292	15,223	14,098	14,148	13,765	15,923	9,083	10,208	10,158	10,541	8,383
299	20,065	20,400	20,400	20,065	20,400	3,605	3,270	3,270	3,605	3,270
300	8,413	9,088	10,049	8,167	10,049	4,344	3,669	2,708	4,590	2,708
301	3,289	3,107	3,743	3,093	3,743	2,414	2,596	1,960	2,610	1,960
302	10,136	9,221	11,981	5,615	11,981	4,080	4,995	2,235	5,615	2,235
Total	122,555	122,458	124,824	117,906	130,043	33,448	33,545	31,179	38,097	25,960

Source: Flynn 1995. This information derived from the ROS inventory in the Chatham Area GIS.

Table 4-56
Shoreline Miles by Alternative

VCU	Natural Miles					Modified Miles				
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5 No Action	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5 No Action
287	23.0	23.2	22.9	22.9	23.2	0.9	0.7	1.0	1.0	0.7
288	10.7	10.7	10.7	10.4	10.7	0.0	0.0	0.0	0.3	0.0
289	12.2	12.2	12.2	12.2	12.2	0.0	0.0	0.0	0.0	0.0
290	5.0	5.0	5.0	5.0	5.0	0.0	0.0	0.0	0.0	0.0
291	3.2	3.2	3.2	3.2	3.2	1.2	1.2	1.2	1.2	1.2
292	0.0	0.0	0.0	0.0	0.0	14.9	14.9	14.9	14.9	14.9
299	0.0	0.0	0.0	0.0	0.0	6.7	6.7	6.7	6.7	6.7
300	6.7	5.6	6.7	5.9	6.7	2.9	4.0	2.9	3.7	2.9
301	0.0	0.0	0.0	0.0	0.0	4.2	4.2	4.2	4.2	4.2
302	15.2	14.3	19.9	13.9	19.9	7.2	8.1	2.5	8.5	2.5
Total	76.0	74.2	80.6	73.5	80.9	38.0	39.8	33.4	40.5	33.1

Source: Flynn 1995.

There would be no setting change in Alternative 5, the no-action alternative. Of the others, Alternative 3 would have the least impact on recreation. Alternative 3 would have the fewest acres changed from a natural to a modified setting because most harvest activities would be located near areas previously logged. More importantly, only 0.3 miles of shoreline would change setting because most harvest activities would be located near previously logged areas. Alternative 3 would also have fewer effects to recreation because it would locate harvest activities in those areas farthest from Sitka.

Alternative 4 would have the largest effect on recreation setting. It would affect the largest number of acres and shoreline miles of setting. Additionally, under Alternative 4, harvest activities would impact the greatest number of bays.

Although Alternative 2 would affect the second-largest number of acres and shoreline miles, its actual effects on recreation would be less than Alternative 1, because Alternative 2 does not impact as many bays.

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The number of acres of recreation setting that would be affected is small compared to the size of the Project Area. In each action alternative, most of the new roads and units would be located away from the beach areas, where most recreation use takes place. Relatively few acres would change setting and the percentage of change from the existing condition would be small. Because of this, the effects of setting change on the recreation resource are not expected to be significant.

Roads and Road Management Objectives (RMOs)

With the reconstruction and expansion of the road network for new timber harvest, some areas could be managed for motorized recreation. Roads will be built in all action alternatives, although road maintenance and access strategies vary for each alternative. RMOs provide direction for these road maintenance and public access strategies. For a detailed explanation and listing of RMOs see the Glossary and Appendix D. Public access strategies are an important part of the RMOs. These strategies vary according to physical and social resource concerns and the themes of the action alternatives. Although Alternative 4 provides the greatest number of miles of road constructed or reconstructed, Alternative 1 will provide the most miles of road available for roaded recreation if the RMOs are implemented as planned. Roaded recreation opportunities within the Project Area will be limited because the road systems will not be connected to a public road or the Marine Highway System. The most common vehicles that will be used are those that can be brought in by small boat such as ORVs, motorcycles, and mountain bikes. The road systems will also be used for walk-in access.

Roads that are closed to larger vehicles by installing waterbars could continue to be used by ORV users if RMOs permit, the traffic level is high, and the individual users make an effort to keep the roads open. Currently, ORV users are removing blowdown timber and cutting out enough alder regrowth to maintain ORV access on portions of the St. John Baptist Bay road system. This will probably continue to occur and may expand to new roads constructed under this project. Removal of bridges and large culverts will probably block passage to ORVs in some alternatives, however this may not stop access by foot traffic if the attraction is great enough. We expect this to occur on the Schulze Cove road system in Alternatives 1, 3, and 4. In Alternatives 3 and 4, portions of the Schulze Cove road system will receive maintenance, although access will be discouraged. In Alternative 1, only Maintenance Level 1 is planned and vehicle access would be eliminated. In reality a lake, which the road will provide access to, will probably be a large enough attractor to keep people using the road. The presence and heavy use of the Piper Island Recreation Cabin in Schulze Cove will draw a fairly large number of recreationists to the area. Many of these cabin users will want to investigate the lake. Increased access to all areas, especially if accompanied by motor vehicle or ORV use, will increase pressure on game species and sport fishing. This use can be controlled by changing the RMOs, if necessary, and may diminish over time if alder regrowth slowly closes the road to ORV and foot traffic.

Recreation Places

Appendix F includes tables and maps showing changes to Recreation Places in each alternative.

Effects to Recreation Places can be divided into those of short and long term duration. Short-term effects are caused by the presence of workers and the activities associated with logging, road construction, LTFs and HILTS, and logging camp operations. Long-term effects are those which occur due to the physical alterations of the Project Area which persist after the active effects have ended and the workers have left the area.

The short-term effects will probably have the greatest impact on people who use the Project Area for recreation. Roads, sort yards, LTFs and HILTS, log raft storage areas, and logging camps are often located at or near recreational anchorages. Due to noise, visual impacts, and the resulting change in recreational setting, many existing recreation activities are incompatible with an active logging operation.

Recreational anchorages near LTFs and logging camps may not be suitable or desirable for general public use during the active portion of logging. Logging operations are historically active for three to five years; this is expected to be the case for the Northwest Baranof Project as well. Recreationists may avoid areas of active logging because the areas do not fulfill their expectations of a wildlands experience. One provider of commercial wildlife viewing tours, however, has stated that they would use the opportunity to show their clients an active LTF. Noise from logging operations may affect the solitude and experiences of recreationists. Competition from logging camp residents for fish, wildlife, and other forest products may discourage other recreation and subsistence users. As displaced users become aware that logging operations have ceased, these recreation users will slowly return.

After active logging operations in the Project Area have ended, physical alterations to the Recreation Places will be the long-term effects which may alter the experiences and use patterns of recreation users. Generally, we estimate the long-term effects of all action alternatives in this project to be less significant than the short-term effects on recreation. Over time, brush and trees will grow back in the units, reducing the visual impacts. Most harvest activities will occur along existing road systems or near areas where past harvest occurred away from the shorelines. The majority of these existing road systems are heavily brushed in and will be reopened for the sale. Four to five years after the sale is closed out, alder growth will clog many of the roads and they will resemble their present condition.

Analysis by the Forest Service has concluded that approximately 50 percent of the current activities occurring in Recreation Places rely upon the natural appearance of the areas (Forest Service 1990). If a Recreation Place is entered for timber harvest, those activities that are incompatible will cease until the area returns to a natural setting. It has been estimated that the natural appearance of the area returns after one rotation. As a result, a Recreation Place entered for timber harvest would see a decline in at least some types of recreation activity for 40 to 150 years. The degree to which roading and harvesting have an impact on a Recreation Place determines whether its unique characteristics are lost or remain.

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Most of the Recreation Places in the Project Area are accessed by boat, the most economical and flexible mode of travel for this area. None of the action alternatives for this Project will completely eliminate a Recreation Place; however, many Recreation Places will be substantially altered by management activities. The extent of these changes varies with the location and management of roads and the location of planned cutting units. Except at LTF and HILT sites, a beach buffer will protect most anchorages and beaches. Even at HILTS there will be little or no effect on the land, since the only development will be a tieoff. Although people will most likely continue to use these places, changes in the surrounding areas will change the recreational experiences.

Table 4-57 shows the size and setting of each Recreation Place in each alternative.

Table 4-57
Recreation Place Setting and Acres by Alternative

Recreation Place	Setting**	Alt. 1	Alt. 2	Alt.3	Alt. 4	Alt. 5 No Action
Neva Strait*	N	478*	370*	843*	370*	843*
N.E. Neva	M	0	473	0	473	0
Nakwasina Passage*	N	501*	501*	501*	501*	501*
St. John Baptist Bay Road System	M	7,172	4,720	4,720	5,963	4,720
Nak.Passage/St. John Road	N	346	346	346	508	346
St. John Road Uplands	N	503	503	503	503	503
Channel Rocks	N	200	200	200	200	200
Fish Bay Road System	M	2,828	2,828	2,828	2,828	2,828
Head of Fish Bay	N	211	211	211	211	211
Haley Anchorage/Haley Point	N	662	662	662	662	662
Haley Point Uplands	N	3,841	3,841	3,841	3,841	3,841
Bear/Baby Bear Bay	N	784	798	784	784	798
Range Creek Cove/Yellow Point	N	270	270	270	270	270
Rodman Bay	M	3,524	1,862	2,370	2,370	2,215
Sinitsin Cove*	N	2*	2*	2*	2*	2*
Nismeni Cove	N	396	396	396	396	396
Pogibshi/Goose Cove	N	375	375	375	375	375
Launch Cove/Island Point	N	331	331	331	331	331
Schulze Cove/Piper Island	N	645	610	645	645	610
Schulze Cove Road System	M	670	0	802	802	0
Nakwasina Sound, East *	M	331*	250*	250*	331*	250*
Hemorrhoid Lake	N	675	675	675	675	675
Appleton Cove	M	0*	498*	0*	0*	145*
Head of Nakwasina Sound	M	569	569	569	567	569
Rosenberg Lake	N	2,076	2,076	2,076	2,076	2,076
Nakwasina Passage Road System	M	1,288	1,254	1,254	1,288	1,254
Total Acres		28,678	24,621	25,454	26,972	24,621

* Recreation Place extends beyond the Project Area. Acres listed are for only that portion within the Project Area.

** N = Natural

M = Modified

Source: Flynn 1995.

Appendix F includes tables and maps showing changes to Recreation Places in each alternative.

Fourteen Recreation Places are unaltered in all Alternatives. These Recreation Places are:

Channel Rocks	Pogibshi/Goose Cove
Haley Point Uplands	Launch Cove/Island Point
Haley Anchorage/Haley Point	Nismeni Cove
Head of Fish Bay	Nakwasina Passage
Fish Bay Road System	St. John Road Uplands
Sinitisin Cove	Hemorrhoid Lake
Range Creek Cove/Yellow Point	Rosenberg Lake

Recreation Places expand, contract, split, or consolidate with other Recreation Places depending on the location of harvest units, roads, and LTFs. Roaded Recreation Places vary according to the road management objectives (RMOs) for specific roads in each alternative. (See the discussion of RMOs in this section.) Because of this variation by RMO, using total acres of Recreation Places by alternative to determine relative effects to the recreation resource can be misleading. By considering the number and location of Recreation Places affected, changes to recreation setting, and change in size of the Recreation Places (while factoring in the effects of RMOs), an evaluation can be made as to the relative magnitude of effects of alternatives on the recreation resources.

Alternative 4 would have the greatest impact on recreation. Alternative 4 would affect ten existing Recreation Places located in Rodman Bay, Schulze Cove, St. John Baptist Bay, Neva Strait, Nakwasina Passage, and Nakwasina Sound. It would also create two new Recreation Places. One Recreation Place would be created by the Schulze Cove road system. The other would be created when the existing Neva Strait Recreation Place is split due to changes in the recreation setting.

Alternative 1 would have the second-largest effect on recreation. It would affect eight existing Recreation Places located in Rodman Bay, Schulze Cove, St. John Baptist Bay, Neva Strait, and Nakwasina Sound. It would also create the Schulze Cove Road System Recreation Place.

Alternative 2 would have the third largest effect on recreation. It would affect three existing Recreation Places located in Rodman Bay and Neva Strait. Although Recreation Places in Nakwasina Sound, Nakwasina Passage, and St. John Baptist Bay would not be directly affected, nearby activity would influence use of Recreation Places in those bays. Alternative 2 would create a new Recreation Place when the existing Neva Strait Recreation Place is split due to changes in the recreation setting.

Of the action alternatives, Alternative 3 would have the least impact on recreation. It would affect four Recreation Places located in Rodman Bay and Schulze Cove. Although Alternative 2 directly affects fewer Recreation Places than Alternative 3, harvest activity is concentrated north of Fish Bay in Alternative 3; therefore, there will be little or no indirect effects to Recreation Places south of Fish Bay.

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Recreation Special Use Permits

Setting changes, although relatively small in the context of the entire Project Area, could appear substantial for specific locations within the Project Area. In the short term, human activity due to field reconnaissance, timber layout, road construction, logging, and logging camp activity may reduce the overall desirability and suitability of the area for recreation and tourism. This could adversely effect providers of commercial services. Brown bear hunting will be particularly affected due to the bears' tendency to avoid human activity. These effects will decrease as harvest activities end and logging camps are closed. In the long term, more roads will lead to increased access to the Project Area. With more people in the area, the chance for human/bear conflicts will increase, which may result in more bears killed in defense of life and property. Increased human activity may also change bear use patterns of the area. These two problems could result in fewer bears being located by outfitter/guides, which could result in dissatisfied clients.

Providers of commercial services may not be affected, or they may be affected in a couple of ways:

- They may be displaced to other areas that provide the natural setting and amenities that their clients are seeking. This may conflict with existing operations already established, or may increase pressure on Wilderness, Monument, and Legislated LUD II areas.
- They may develop substitute activities that do not require the same level of natural or primitive settings. This may require new marketing strategies to capture a different segment of the recreating public.

All action alternatives would have some impacts on guided and non-guided hunting within the Project Area in the short term. Increased activity in the Project Area during the period of sale planning, layout, and active logging may discourage bears from coming down to the shoreline. Since most spring brown bear hunting is done by spotting from a boat and then stalking, hunting success would be reduced. See the discussion on outfitters and guides in the Economics section later in this chapter.

Special Areas

Fish Bay Hot Springs was identified in the TLMP Revision as a Special Interest Area. It is unaffected in all alternatives. A parcel of land extending south from Yellow Point has been recently conveyed to the State of Alaska for possible designation as a State Marine Park. This parcel includes Baby Bear Bay, Bear Bay, and Bear Island. This parcel will not be affected by any alternative. (Note: the Bear/Baby Bear Recreation Place extends beyond the boundaries of the proposed State Marine Park. Do not confuse effects to the Recreation Place with effects to the park.)

The Sitka District Coastal Management Program "Public Use Management Plan" (June 1993) prepared by the City and Borough of Sitka identifies the Fish Bay Hot Springs Trail, the Big Bear/Baby Bear Bays State Marine Park, and the Nakwasina Passage to the head of Nakwasina Sound as Special Management Areas. The Fish Bay Hot Springs Trail and the Big Bear/Baby Bear State Marine Park will not be affected in any alternative. The

Nakwasina Passage to the head of Nakwasina Sound “Special Management Area” will be impacted in Alternatives 1 and 4 by LTF activity at Noxon Creek and the HILTS at the head of Nakwasina Sound. These impacts are consistent with the intent of the Sitka District Coastal Management Plan.

Recreation Use and Trends

We do not have quantitative recreation use information for the dispersed Recreation Places within this Project Area; however, past uses, trends, and surveys can be analyzed to indicate the general nature of recreation in Southeast Alaska. Sources for these trends and surveys include the Supplement to the Draft EIS for the TLMP Revision (1991), State Comprehensive Outdoor Recreation Plan (1988), Sitka Economic Base Study Statistical Update (1994), discussions with recreationists, and discussions with providers of commercial services such as outfitters, guides, air taxis, and cruise ship operators.

Analysis for the Supplement to the Draft EIS for the TLMP revealed several recreation trends for Southeast Alaska which can be viewed in a similar context for the Project Area. Recreation use can be used to project demand for different settings into the future. Demand for all types of recreation is growing. The greatest increase in demand is for recreation on unmodified shorelines away from major marine travel routes which are accessible by small boats. It is this setting that characterizes and defines the marine nature of recreation on the Tongass National Forest. It appears demand can be met into the future for all recreation opportunities except in this setting. Demand for this setting is expected to exceed supply by the end of the decade. All action alternatives will contribute to this decline in unmodified shorelines accessible by small boat.

Surveys suggest residents of Southeast Alaska value opportunities for remote, uncrowded wildland and marine outdoor recreation. Visitors to Southeast Alaska often expect unaltered pristine settings. Cruise ship companies and other recreation/tourism providers often market the “Alaska Mystique.” Advertisements for these providers often show cruise ships with glacial ice floating all around, small colorful towns, wild animals, and rugged mountains. The advertisements give the impression of an uncrowded land with little evidence of human impacts.

Cumulative Effects

Setting changes in all alternatives are not substantial for the Project Area. The Project Area contains only a small proportion of the total recreation opportunities on the Tongass National Forest; however, other projects of a similar nature which are planned or are in various stages of completion for nearby areas may subtly change the overall character of the collective area and will cause the recreation experience to shift from that of a more natural one to that of a more modified landscape. This shift is within the scope of the parameters outlined within the TLMP.

Future entries into the Northwest Baranof Project Area, and those planned in adjacent areas, would continually shift the settings of the Recreation Places from natural to modified. Over time, the activities and experiences would change as well. There will be increased competition for those recreational places with natural settings, especially for

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unmodified shorelines away from major marine travel routes which are accessible by small boats. The activities of subsistence users, resident recreationists, tourists, outfitters and guides, and tour and cruise ship operators may not always be compatible. Conflicts among users may occur and social encounters are likely to increase. This will increase the need for active management of the various users in some areas, furthering the shift to developed and regulated settings.

With the logging of the Project and nearby areas, there would be a general displacement or elimination of recreational users who are seeking a wildlands experience. This would also occur with the outfitters and guides who provide a wildlands experience for clients. Outfitters have several options in changing the activities and services they provide and in capturing new market segments. Recreationists have similar options. On the other hand, the continual development would open up the Project Area to recreation activities that are not dependent on a natural setting. This would be particularly true if the small isolated road networks are connected over time.

Scenic Quality

Direct Effects

Visual impacts associated with proposed activities such as road construction, clearcut logging methods, and LTFs usually are a result of the introduction of unnatural lines and textures which contrast with the surrounding natural appearing landscape. The no-action alternative (Alternative 5) would result in no additional changes to the scenic quality of the area. All action alternatives would result in additional visual impacts of varying degrees in the Project Area. These visual impacts, in many cases, will be evident to the average forest user. We used field observations, topographic map analysis, and computer-generated perspective simulations to determine the visual impacts of the various alternatives.

Log Transfer Facilities and Logging Camps

LTFs present a very strong visual impact when viewed within a foreground distance because they are large, are located near saltwater, and have a bold linear shape. Their relatively low profile helps to blend them into background views. Clearings for sort yards and logging camps also add to the visual impacts associated with LTFs. However, their location, which is usually on fairly level or gently sloping sites, helps to absorb much of their visual contrasts when viewed from saltwater. Floating logging camps are being considered for this project. Visual impacts from these are considered to be much less than more permanent upland camps.

Slide-type LTFs usually present less of a visual impact than larger bulkhead-type facilities. The bold form of the bulkhead associated with barge LTFs prevents it from blending into the surrounding landscape. Often, the type of material and color of the bulkhead creates strong contrasts that can be seen even in the background distance zone. Careful selection of materials and colors can effectively mitigate such contrasts. Proposed LTF locations are displayed on the Alternative maps, and in Figure 4-3.

Effects by Alternative

Alternative 1

This alternative distributes harvesting and road building activities throughout the Project Area. The current visual quality along the Alaska Marine Highway route between Fish Bay and St. John Baptist Bay and between Nakwasina Passage and Starrigavan Bay is maintained.

Of the eight VCUs entered, six would have a total of 18 units which do not fully meet the Visual Quality Objective. The existing visual condition of the VCUs entered by this alternative ranges from naturally appearing to heavily altered. The future visual condition resulting from implementation of this alternative will vary by VCUs as follows: VCUs 287 and 299 will appear slightly altered; VCUs 288, 300, and 302 will appear moderately altered; VCUs 292 and 301 will appear heavily altered; and VCU 291 will not substantially change.

Alternative 2

This alternative distributes harvesting and road building activities throughout the Project Area. The current visual quality along the Alaska Marine Highway route between Fish Bay and Starrigavan is maintained.

Of the six VCUs entered, four would have a total of 20 units which do not fully meet the VQOs. The existing visual condition of the VCUs entered by this alternative ranges from naturally appearing to heavily altered. The future visual condition resulting from implementation of this alternative will vary by VCUs as follows: VCU 289 will appear slightly altered, VCU 300 will appear moderately altered, VCU 302 will appear heavily altered, VCU 292 will appear extremely altered, and VCUs 291 and 301 will not substantially change.

Alternative 3

Under this alternative, timber harvest and road building would be concentrated north of Fish Bay. The current visual quality along the Alaska Marine Highway route between Fish Bay and Starrigavan Bay is maintained. This alternative creates the least impacts of the action alternatives.

Of the five VCUs entered, four would have a total of 16 units which do not fully meet the VQOs. The existing visual condition of the VCUs entered by this alternative ranges from naturally appearing to heavily altered. The future visual condition resulting from implementation of this alternative will vary by VCUs as follows: VCUs 287 and 289 will appear slightly altered, VCU 288 will appear moderately altered, and VCUs 291 and 292 will appear extremely altered.

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Alternative 4

Under Alternative 4, timber harvest and road building would be distributed throughout the Project Area. This alternative would have the greatest impacts on the visual resources in the Project Area.

Of the nine VCUs, seven would have a total of 29 harvest units which do not fully meet the VQOs. The existing visual condition of the VCUs entered by this alternative are natural appearing. The future visual condition resulting from implementation of this alternative will vary by VCUs as follows: VCUs 287, 289, 299, and 300 will appear slightly altered; VCU 288 will appear moderately altered; VCUs 302 and 300 will appear heavily altered; and VCUs 291 and 292 will appear extremely altered.

Alternative 5

Alternative 5, as a no-action alternative, would produce no additional visual changes in the Project Area. The existing visual condition ranges from naturally appearing in VCU 288 and 289 to heavily altered in VCUs 291 and 292.

Visual Quality Levels

The effects that would result from the proposed actions are called the Visual Quality Levels (VQLs). This evaluation assumes that the design criteria for the visual resource, described in the Mitigation Measures section (Appendix A) and the recommendations in the Road and Unit Cards (Appendices N and O), will be implemented during unit layout.

Table 4-58 displays the VQLs resulting for each alternative's activities. For Alternative 5, only the inventoried VQOs are shown and, for Alternatives 1 through 4, the VQLs resulting from implementation of the proposed actions are displayed.

Table 4-58
Visual Quality Levels (VQLs) by Alternative and in Acres*

VQO	Visual Quality Levels (VQLs)				VQO
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5 No Action
Retention	3,216	3,208	3,208	3,216	3,216
Partial Retention	47,080	49,258	46,844	40,510	61,046
Modification	75,784	75,441	75,978	81,950	64,030
Maximum Modification	29,680	27,853	29,680	30,084	27,468

Source: Ouderkirk 1995. * Does not include 243 acres of fresh water in the Project Area.

Maximum Disturbance Threshold is a tool used to define the level of harvest over a large area that can occur within the parameters of particular VQOs.

VCUs or portions of VCUs are assigned VQOs of Preservation, Retention, Partial Retention, Modification, or Maximum Modification. Each land acre in a VCU is given a VQO. We use Maximum Disturbance Threshold (MDT) to analyze cumulative effects. Proposed harvest unit acres are combined with existing harvest unit acres (those with conifer regeneration less than 30 years old) and expressed as a percentage of the total acres of that VQO within the VCU. These are the anticipated cumulative visual effects. If the resulting percentage exceeds the MDT, then the cumulative effects to the visual resource are considered to be negative. Table 4-59 only displays the expected cumulative visual effects for those VCUs and VQOs which exceed the MDT. For information about the VQOs and VCUs which have not exceeded the MDT, see the Visual Resource Effects analysis in the planning record.

VQO	Maximum Disturbance Threshold (MDT)
Preservation*	only natural disturbances are allowed.
Retention	no more than 8 percent of the area may be in a disturbed condition at any one time.
Partial Retention	no more than 16 percent of the area may be in a disturbed condition at any one time.
Modification	no more than 25 percent of the area may be in a disturbed condition at any one time.
Maximum Modification	no more than 35 percent of the area may be in a disturbed condition at any one time.

* No portion of the Project Area has a VQO of Preservation.

Table 4-59
Cumulative Visual Effects* (total percentage of disturbance per VQO)

VCU	VQO	MDT	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
287	Retention	8	28	28	28	28	28
291	Maximum Modification	35	45	46	46	46	45
292	Partial Retention	16	29	34	32	35	29
299	Retention	8	53	53	53	53	53
299	Maximum Modification	35	71	69	69	71	69
300	Retention	8	18	18	18	18	18
301	Retention	8	13	13	13	13	13
301	Partial Retention	16	21	22	12	22	12

* Only those VCUs and VQOs shown where the MDT is exceeded. Source: Ouderkirk 1995.

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TLMP Retention Factors

TLMP Retention Factors are elements of a method used in the TLMP planning process to provide line officers and ID Teams the latitude to manage certain wildlife, fish, and visual resource values which could be adversely effected by timber harvest. Retention Factor information is expressed as acres of operable commercial forest land (CFL) retained and acres programmed for timber harvest over extended rotation periods to be used in subsequent planning projects within the overall Forest Plan. For more information, see the Visual Resource Inventory Report (Ouderkirk 1993).

Table 4-60 summarizes the amount of proposed and existing harvest within each VCU for the VQLs of Retention and Partial Retention. These have been assumed to equate to areas of high scenic quality as identified in the Forest Plan.

Table 4-60
TLMP Retention Acres

VCU	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5 (Extended Rotation Acres Previously Harvested*)	Total Extended Rotation Acres Available For Harvest
287	1,402	1,355	1,405	1,405	1,669	6,775
288	211	0	212	212	0	1,485
289	279	366	366	366	279	3,649
290	149	149	149	149	149	1200
291	410	446	446	446	382	1,989
292	943	1,073	1,009	1,115	806	5,993
299	817	760	760	817	1,116	1,152
300	804	826	706	855	705	3,119
301	492	513	706	513	434	N/A
302	531	675	365	675	689	2,471

Source: Ouderkirk 1996. N/A - not applicable. * Includes harvest in VQOs of Retention and Partial Retention that has occurred since 1955.

All of the Project Area is currently below the level established in the Forest Plan for retention acres. In all action alternatives, VCU 299 will exceed the established guideline. All other VCUs will be within acceptable limits in all alternatives.

Heritage Resources

Heritage resources are an integral part of the natural environment and are nonrenewable. Impacts to heritage resources can be irreversible and permanent.

In conducting heritage resource investigations in the Project Area, archeologists identified one possible traditional property and 41 sites which are eligible for inclusion in the National Register of Historic Places (Chapter 3). Many of these sites, whether prehistoric or historic, contain information about both environmental conditions and lifestyles of former occupants of the area. Traditional properties and historic sites have cultural significance to contemporary Sitka Tlingit.

The National Historic Preservation Act (NHPA) of 1966 as amended directs Federal Agencies to take into account the effect of an undertaking on historic properties (Section 106). "Historic property" as used in NHPA means "any prehistoric or historic district, site, building, or object included in, or eligible for inclusion in the National Register [36 CFR 800.29 (e)]. Federal regulations (36 CFR 800) govern the Section 106 review process. Agency archeologists are completing the Section 106 process for the proposed timber sale. This process includes the completion of a formal Determination of Effect in consultation with the State Historic Preservation Officer, the Advisory Council on Historic Preservation, Indian Tribes, and interested parties.

We have completed the Section 106 review for all timber-harvest-related activities displayed in this EIS. This includes roads, units and LTFs in all alternatives, with some specific stipulations.

We have not completed Section 106 review for logging camps, helicopter insertion log transfer sites (HILTS), shore-ties and sort yards. Exact locations for these activities are not yet known, hence our Heritage Resources staff are not yet able to determine their effects under the Section 106 process. Similarly, any activity associated with the planned sales which does not occur within 100 meters of potential roads, units and LTFs displayed in this EIS will be subject to Section 106 review.

We are also aware that Sitka Tribe of Alaska is planning to nominate the Kiks.adi Survival March Route to the National Register Historic Places. Our archeologists agree that the route may qualify as a traditional property and are assisting in the nomination effort. Once a clearly defined property has been determined eligible for inclusion on the National Register by the State Historic Preservation Officer or has been selected for inclusion in the National Register by the Secretary of the Interior, we will, in consultation with the Sitka Tribe, go through the formal process of determining what effects, if any, the proposed harvest activities may have on the property.

Direct and Indirect Effects

Direct impacts to historic sites can include alterations to the setting of sites; alterations of above-ground objects, features and structures; and disturbance of subsurface deposits. Indirect effects may include changes in stream channels, sedimentation patterns, or slope stability brought about by project activity near historic properties.

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Sites are considered to be at risk of direct or indirect impact based on the proximity of project activities. As a general rule, project activity occurring within the boundary or within a 100-meter (330-foot) buffer zone of a historic site will have a direct effect on the resource. Project activity at a distance of greater than 100 meters may indirectly effect a historic site. The risk diminishes significantly as the distance increases.

The following section lists potential direct and indirect effects by alternative. In the analysis of possible indirect effects we list all project activity planned at a distance of 0.3 mile or less from historic sites (Table 4-61). No indirect effects are anticipated; however, as a precautionary measure, archeological review of the final designs for specified activities is required.

Alternative 5 will result in no direct or indirect effect to heritage resources. Historic sites will continue to decay due to natural causes, such as weather and erosion.

Direct Effects

Alternatives 1, 3, and 4

No project activity will have a direct effect on any known historic site in any of these alternatives. Values associated with customary and traditional gathering areas, historic sites, and other heritage resources will be enriched as history, knowledge, and practice are passed on to future generation.

Alternative 2

Without stipulations, the reconstruction of road 7558 could have a direct effect on Sites 49 SIT 412 and 49 SIT 413. The current road, built during the early 1960's, impacted these two small shell middens. Direct effects will be avoided with implementation of the following stipulations.

Stipulations

Reconstruction along road 7558 between Lisa Creek and the existing LTF site will be limited to the existing road surface or the downslope, water-side of the existing road surface.

No ditch line excavation will be planned upslope of the existing road between Lisa Creek and the existing LTF site.

An archeologist will work with the road designer in planning the road segment between Lisa Creek and the existing LTF site. The road design will be subject to approval by the Forest Archeologist.

Excavation in and around the existing LTF site will require archeological review.

An archeologist will monitor road and LTF reconstruction at the time of implementation. If there is any threat to the archeological sites or if additional archeological resources are encountered, project activity will stop.

Indirect Effects

Any changes in the road or LTF location will be subject to review under Section 106 of the NHPA of 1966 as amended.

The following units, roads and LTFs lie within less than 0.3 mile of known historic sites.

Table 4-61
Project Activity With in 0.3 mile of Historic Properties

Activity	Approximate Distance and Direction	Site 49 SIT	Alt. 1	Alt. 2	Alt. 3	Alt. 4
VCU 302						
Road 7583	0.2 mile northwest of	390	x	x		
St. John Baptist LTF (at terminus of Road 75831)	0.2 mile northwest of	390	x	x		
Unit 6271	0.2 mile east of	392	x			
	0.3 mile southeast of	391	x			
Unit 6293	0.3 mile east of	394	x	x		x
Road 758313	0.3 mile east of	394	x	x		
VCU 300						
Road 75831S	0.2 mile northwest of	408		x		x
	0.2 mile northwest of	409		x		x
	0.3 mile west of	397				x
Road 75851	0.2 mile east of	399				x
	0.3 mile east of	398				x
Nakwasina Passage LTF (at terminus of Road 75851)	0.3 mile southeast of	399				x
VCU 301						
Road 75581	0.2 mile east of	410	x			x
	0.1 mile southeast of	414		x		
Lisa Creek LTF (at terminus of road 7558)	0.1	415		x		
Road 7558	adjacent to	412		x		
Road 7558	adjacent to	413		x		

Source: Myron 1995

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Currently no indirect effects are anticipated in Alternative 1, 2, or 4 from the above-listed activities. As a precautionary measure, however, an archeologist will be notified at the final design stage for these activities. The archeologist will consult with hydrologists, soil scientists and engineers to ensure that archeological sites will not be damaged indirectly by project activity.

In Alternative 3, no project activity occurs at a distance of 0.3 mile or less from any historic site. No indirect effects are anticipated.

Cumulative Effects

Cumulative effects on heritage resources occur through natural erosion and weathering as well as from continued development on lands containing heritage sites.

Much of the Project Area encompasses territory traditionally claimed by the Sitka Tlingit and the Angoon Tlingit. Northwest Baranof was also the venue of an important event in the history of the local Tlingit: the Sitka Kiks.ádi Survival March (Chapter 3). While project activity cannot have an effect on an historic event, continued Federal management activities have a long-range, cumulative effect on the landscape where the event occurred. This landscape is a place of great importance to the Sitka and Angoon Tlingit. The Forest Service seeks to participate in partnerships and challenge cost-share agreements to promote awareness and interpretation of the local heritage.

As seen in the cases of 49 SIT 412 and 49 SIT 413, historic sites in the Project Area have been damaged by timber harvest activity (during the 1960's). The Chatham Area began consistently implementing the inventory, evaluation, and assessment of effects through the Section 106 process in the early 1980's. If the historic sites in the Project Area are avoided and protected using the appropriate stipulations and reviews, there should be no additional cumulative effects to historic sites.

Land Status

Lisianski Peninsula

Alternatives 1 and 4 would result in construction of a little more than 0.5 mile of new road through State Selection AA-71691 (NFCG-305), Lisianski Peninsula-Nakwasina Sound. There is approximately another 0.25 mile of existing road within this selection which would also be used. The Forest Service can construct new road through this unconveyed State selection only if the State Department of Natural Resources (DNR) concurs under authority of Sec. 906(k) of the ANILCA of December 2, 1980. After obtaining DNR concurrence, the Regional Forester can issue a Federal Right-of-Way Reservation which would allow road construction and would mature into an easement if the lands are conveyed. On January 11, 1995, the Forest Service applied to DNR for ANILCA 906(k) concurrence so this new road could be constructed. Upon conveyance, the existing road segment can be used without State concurrence and an easement can be reserved on it.

Alternative 2 would result in approximately 1.5 miles of reconstruction of existing road and reconstruction of an existing LTF, both projects overlaying State Selection AA-71691, and Native Allotment Applications J-011250 (Eddie Marshall, deceased) and A-060985 (Johnny John, deceased). These claims are located in VCU 301. The existing road and upland portions of the LTF will not require future approvals from the State and an easement can be reserved upon conveyance on portions that cross the State selection. Road construction and long-term access across the two Native allotment claims generally require a Deed of Further Assurance from the Tlingit Haida Central Council. On January 11, 1995, the Forest Service applied to the Tlingit Haida Central Council for a Deed of Further Assurance to secure long-term access across these two claims.

Big Bear/Baby Bear

Harvest units 5001 and 5002 (in Alternatives 1, 3, and 4) are immediately adjacent to State Selection AA-71693, at Big Bear/Baby Bear. This selection has been conveyed to the State but is unsurveyed. Selection boundaries would need to be identified during unit layout to avoid encroaching on the State lands.

Nakwasina Sound

Harvest units 8032 and 8065 (in Alternatives 1 and 4) are adjacent to Native Allotment Application J-10940 (the heirs of Mary Gray, deceased), located in VCU 299. This application has not been surveyed so allotment boundaries need to be positively identified on the ground during unit layout to avoid encroaching on the claim.

Log Transfer Facilities

Alternative 1 would result in reconstruction of old LTFs at the north side of Rodman Bay (VCU 292), the north side of St. John Baptist Bay (VCU 302), and Noxon Creek (VCU 299). It would also result in the construction of new LTFs at the south side of Rodman Bay (VCU 292), Schulze Cove (VCU 287), and Lisa Creek (VCU 301). The Forest Service does not hold authorizations for any of these facilities and would need to acquire all State and Federal permits.

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Alternative 2 would result in reconstruction of old LTFs at the north side of Rodman Bay (VCU 292), the north side of St. John Baptist Bay (VCU 302), and Lisa Creek (VCU 301). It would also use an existing LTF at Appleton Cove (VCU 293). The Forest Service does not hold authorizations for facilities at Rodman Bay, St. John Baptist Bay, or Lisa Creek and would need to acquire all State and Federal permits at these sites. At Appleton Cove, the Forest Service holds current authorizations.

Alternative 3 would result in reconstruction of an old LTF at the north side of Rodman Bay (VCU 292) and the construction of new LTFs at the south side of Rodman Bay (VCU 292) and Schulze Cove (VCU 287). The Forest Service does not hold authorizations for any of these facilities and would need to acquire all State and Federal permits.

Alternative 4 would result in reconstruction of old LTFs at the north side of Rodman Bay (VCU 292) and Noxon Creek (VCU 299). It would also result in the construction of new LTFs at the south side of Rodman Bay (VCU 292), Schulze Cove (VCU 287), the south side of St. John Baptist Bay (VCU 302), Nakwasina Passage (VCU 300), and Lisa Creek (VCU 301). The Forest Service does not hold authorizations for any of these facilities and would need to acquire all State and Federal permits.

Comparison of Alternatives

Alternatives 3 and 5 would result in the least conflicts from land status. Alternatives 1 and 4 would result in more conflicts, and Alternative 2 would result in the most conflicts.

Careful on-the-ground location of State selection and Native application boundaries will prevent unintentional encroachment of these claims from adjacent harvest units proposed in Alternatives 1 and 3. Direct conflicts result from the new road construction across State Selection AA-71691, at Lisianski Peninsula (proposed in Alternatives 1 and 4), and in the road and LTF reconstruction across Native Allotments J-011250 and A-060985, also at Lisianski Peninsula (proposed in Alternative 2). Of these, the greater concern is with the two Native allotments because we anticipate more difficulty acquiring a Deed of Further Assurance from the Tlingit Haida Central Council than in obtaining ANILCA 906(k) concurrence from the State DNR.

Alternative 1 would result in reconstruction of three old LTFs and construction of three new ones. All six would require acquisition of State and Federal authorizations by the Forest Service. Alternative 2 would result in reconstruction of three old LTFs and use of one existing LTF. The Forest Service has authorization for the one existing site but not the three old ones. Alternative 3 would result in reconstruction of one old LTF and construction of two new ones. The Forest Service does not hold authorizations for any of these sites. Alternative 4 would result in reconstruction of two old LTFs and construction of five new ones. The Forest Service does not hold authorizations for any of these sites. Thus, Alternatives 1 and 4 would require the acquisition of more LTF authorizations than Alternatives 2 and 3. Alternative 5 would not require any new authorizations.

Transportation Systems and Facilities

Roads

Permanent roads are constructed under the terms of timber sale contracts or by means of formal road construction contracts. Between periods of commercial timber haul, roads would be managed as prescribed by their RMOs for possible future access needs. Management strategies may range from keeping the road open and maintaining the road for incidental traffic, to intermittent periods of closure during which natural vegetation would be allowed to grow over the road surface. In all cases, drainage would be maintained to protect watershed resources. During periods of closure, roadways would be seeded with grass. Maintenance would be performed only as needed to protect the structural integrity of the roadway. These maintenance practices facilitate restoration of roads for future use and reduce erosion and sedimentation.

Timber purchasers construct temporary roads to harvest timber on a short-term, one-time basis. These roads do not become part of the permanent transportation system. After harvest, drainage structures are removed. The road surface, cut banks, and fill slopes are seeded with grass and waterbars are installed. These steps minimize erosion and allow the roads to be reclaimed by forest vegetation.

Existing roads will be reconstructed for this project. Reconstruction consists of removing trees and brush and reestablishing the road surface. Drainage structures would be inspected and replaced as needed to bring the road up to current Forest Service standards.

Table 4-62 displays the miles of new road construction, reconstruction, and temporary roads for each alternative.

Table 4-62
New Construction and Reconstruction Roads (in miles)

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
New Construction (miles)	19.3	18.5	9.7	23.8	0
Reconstruction (miles)	11.9	13.1	9.0	16.5	0
Temporary Road (miles)	10.0	8.2	6.8	14.5	0
Existing Roads (not reconstructed)	39.4	38.2	42.3	34.8	51.3
Total Miles of Road in Project Area	80.6	78.0	67.8	89.6	51.3
Alternative Specific Road Miles	41.2	39.8	25.5	54.8	0

Source: Allio 1995.

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The clearing widths required for road development are dictated by steepness of the terrain and by road design standards. Steeper terrain generally requires wider clearing limits resulting in a greater number of acres of vegetation cleared. Access roads average six acres of clearing per mile of road. Land cleared for roads that will be maintained for future resource access will be removed from natural resource production. Rock used for construction of system roads will become a permanent part of the road's subgrade. Rock used to construct temporary roads may be reclaimed after its use and used for other road construction in the Project Area. Table 4-63 compares road clearing by alternative. RMOs for each road in each alternative are discussed in Appendix D.

Table 4-63
Road Clearing by Alternative

	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Acres of Clearing	247	239	153	329

Source: Allio 1995

Log Transfer Facilities

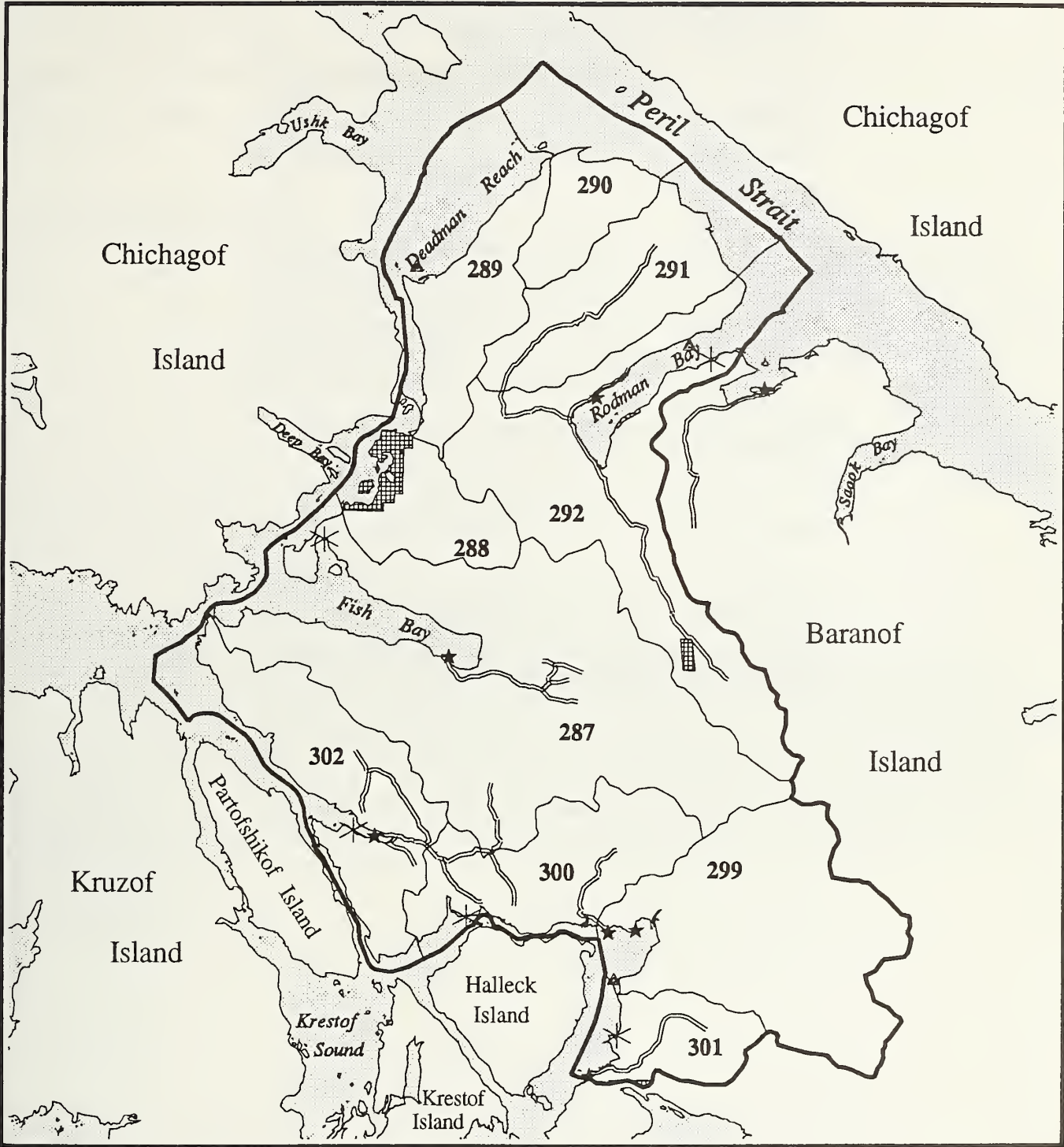
This Project considers a total of ten LTF sites. The three types of LTFs proposed for this project are described in Chapter 2.

Five of the LTF sites proposed in this project were used in previous harvests. These include two sites in Nakwasina Sound (Noxon Creek and Lisa Creek), one site in St. John Baptist Bay, one site in Rodman Bay, and one site in Appleton Cove. Five new sites are proposed and are dispersed throughout the Project Area. The new LTF sites are planned as low angle, drive down ramp facilities. Figure 4-3 displays the locations of all LTFs and Helicopter Insertion Log Transfer Sites (HILTS) in the Project Area. The alternative maps displays LTF and HILT sites specific to each alternative. Table 4-64 lists the proposed volume to be processed at each LTF and HILTS by alternative.

Effects

The direct, indirect, and cumulative effects of the construction, reconstruction, and presence of roads and LTFs are described in the resource specific sections of this chapter.

Figure 4-3
Proposed LTF and HILT Sites



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Table 4-64

Volume of Timber to be Processed (mmbf) at Each Log Transfer Facility (LTF) or Helicopter Insertion Log Transfer Site (HILTS) by Action Alternative

LTF/HILTS	Estimated Sawlog Volume (mmbf) to be Processed			
	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Appleton Cove*		5.7		
NE Rodman	4.3		5.6	7.3
Rodman*	8.0	24.8	21.9	24.8
Goose Cove (HILTS)		2.9	2.9	2.9
Schulze Cove	8.2		8.4	8.4
St. John Baptist*	7.6	13.1		
St. John Baptist S.				4.4
Nakwasina Passage				8.7
Noxon Creek*	2.9			2.9
Nakawsina (HILTS)	2.1			2.1
Lisa Creek*		5.4		
Lisa Creek NW	3.3			5.4
Total	36.4	51.9	38.8	66.9

Source: Allio 1995. * Previously used LTF site.

Off-Site Human Environment

Economics

Wood Products Industry

Each alternative could affect the number and composition of timber-related jobs in Southeast Alaska. To estimate the economic effects of the alternatives we assume that other factors affecting the wood products market remain constant. It is important to note, however, that the amount of timber offered for sale by this project is only one of many factors that ultimately determines employment in the region's wood products industry. Other factors which will influence employment are:

- the type of wood processing facilities available in the region
- the supply, demand, and value of the products manufactured
- worker productivity
- the amount of capital investment
- the technology employed
- interest rates
- foreign exchange rates
- timber management decisions made by other forest owners

The employment and income effects of the alternatives were estimated using the industry-wide average of 8.24 jobs per million board feet harvested. This figure was calculated by the Forest Service economic model IMPLAN (in base year 1992, see Table 4-65 for figures). The associated income effects were also calculated using coefficients generated by the IMPLAN model. The economic effects reported in Table 4-65 include direct and secondary effects. For purposes of this analysis we assume that the timber volume in the action alternatives would be offered in varying amounts over a four-year period. Harvest is assumed to occur during the year following the offering. Actual harvest may occur over a more extended time frame.

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Table 4-65
Project Supported Employment and Income by Alternative

Year Harvest is Planned*	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
1st Year	43	57	55	72	0
2nd Year	152	274	329	358	0
3rd Year	53	54	0	74	0
4th Year	103	129	0	158	0
Average Annual Number of Jobs	88	129	96	166	0
Average Annual Earning \$ millions	\$3.7	\$5.5	\$4.1	\$7.1	0

* Assumes harvest would begin in 1997 and be completed in 2002.

Source: Morse 1995.

Timber harvested under the action alternatives will provide a source of wood to independent mills in operation throughout the region, and/or contribute to Forest Service contract obligations to KPC. This project alone will not be of sufficient duration to encourage investment in new facilities. The primary effect will be retention of existing employment levels.

The no-action alternative (Alternative 5) could result in fewer timber-related jobs if regional mills are not able to purchase wood from another source.

Commercial Fishing Industry

Current standards and guidelines for timber harvest activities are expected to limit adverse effects on fish habitat and fish populations. Jobs in the fishing industry are not expected to change due to implementing any of the Project alternatives.

Recreation and Tourism Industry

Recreation and tourism-related jobs, including employment related to sport hunting and fishing, are projected to change at the same rate as future use. During the 1990's recreational use in Southeast Alaska is expected to increase by 27 percent for general recreation and tourism, 36 percent for sport fishing, and 53 percent for hunting (Forest Service 1990). Implementation of any of the alternatives in the Project Area is not expected to impact this trend significantly.

Jobs and earnings related to money spent by recreationists are widely dispersed across Southeast Alaska. Recreationists will stop at nearby towns to replenish their groceries, gasoline, and other supplies. Most equipment and initial supplies, however, are purchased in their home communities. Employment and personal income generated by recreational use of the Project Area will be similarly dispersed. The recreational users

having the primary economic impact will be individual recreationists, guides and outfitters and their clients, and tourists viewing the Project Area from cruise ships or from the Alaska Marine Highway ferry system.

Many places within the Project Area are seen by passengers of cruise ships and the Alaska Marine Highway. None of the alternatives is expected to effect visual resources to the extent that alterations of marine transportation routes or a decrease in the numbers of passengers would occur. Consequently, no measurable economic impact to waterborne tourism is expected under any of the proposed alternatives.

The 1994 Chatham Area Outfitter Guide Use Report indicates that a total of six big-game guides used areas within or adjacent to the Project Area in 1994. Most of the guides accessed the area by boat. Further examination of the use records show that activity within the Project Area represented an average of 10 percent of the total activity for these six guides. Individual use of the area ranged from a low of 3 percent to a high of 25 percent of total reported activity. Two guides relied on the area for at least 20 percent of their business. The specific areas used by these guides include Fish Bay, Sitka Sound, Salisbury Sound, and Peril Strait narrows.

The report indicates the Project Area is not the primary hunting area of the big-game guides who hold permits to hunt in the area. Of the specific locations reported, only Fish Bay lies completely within the Project Area. No harvest is proposed for Fish Bay under any of the alternatives. For these reasons we assume there would be only minimal economic impact to the outfitter/guide industry under any of the management alternatives.

Although the level of recreational activity that takes place in the Project Area is relatively high by Southeast Alaska standards, most activity is limited to those areas easily accessible by saltwater. In economic terms, no alternative is expected to significantly affect employment and income opportunities in the recreation and tourism industry. Implementation of any of the action alternatives may result in the displacement of recreational users to areas outside the Project Area. This displacement would be a result of recreationists seeking specific recreation opportunities that might no longer be available due to timber harvest or road construction. As more areas throughout Southeast Alaska are harvested for timber, recreationists seeking recreational opportunities in natural settings would find it increasingly difficult to find places to recreate. This displacement, however, would not be expected to significantly change employment or income.

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Community Economics

Differing degrees of resource availability will ultimately effect employment and income at the community level. Under all scenarios there will continue to be logging in Southeast Alaska. It is not possible, however, to determine the economic effects of the Northwest Baranof Project for specific communities because it is impossible to predict which and to what extent each community will benefit. Variables such as which mill successfully bids for the timber, which mill cuts back or closes, which mill remains open, and which logging company successfully competes for the available business are impossible to predict. Workers cross borough and State lines to work in the woods. Logs are hauled to other communities for processing. As their value increases, logs are likely to be hauled longer distances. Because of these factors the analysis of social, employment, and income effects by community is exceedingly complex. The presentation of effects at the community level would be speculative and misleading.

Social Values

All alternatives, including the no-action alternative (Alternative 5), have social implications. What these impacts are and their magnitude varies by the point of view and value system of individuals and groups affected. Generally, people's perception of the significance of impacts decreases as geographic distance increases. The exception to this is when management activities appear to be based on broad public policies which are perceived to be morally wrong or which appear to destroy a resource which is irreplaceable. Swanson and Loomis (1993) highlight that all Americans place a high value on maintenance of viable ecosystems even when those systems are far removed from their homes. This implies that direct commodity production and forest use does not fully account for how society values or assigns the real costs of particular management options.

The Project Area is considered by many Sitka residents to be their "back yard" and, as such, is extremely important to them. The mix of values that Sitka residents want the Project Area to deliver are different from those of people from other areas (e.g., if this timber was to go to KPC, Ketchikan residents may want the Project Area to deliver the maximum amount of timber. Sitka residents, however, do not want timber harvest to adversely affect their subsistence hunting and fishing).

For the Northwest Baranof Project, we have attempted to strike a balance for delivering forest values to the public in all alternatives. We developed a reasonable range of alternatives to meet the purpose and need for the Project using multiple-use and sustained-yield principles and the concepts of ecosystem management and forest health. Furthermore, these alternatives were developed with a recognition of the desires of the public, current policies, and political pressures. Each alternative delivers a broad array of forest values in varying degrees.

Tongass timber sale projects have historically had a variety of positive and negative effects on local communities. To communities dependent on the timber industry, these projects may be seen as beneficial to their way of life with the guarantee of continued employment for their residents. To other communities more dependent on subsistence gathering, these projects may act as a hindrance to the day-to-day lives of their residents.

The Northwest Baranof Project may have an adverse effect on local subsistence and recreation patterns, mainly due to wildlife habitat modification, enhanced or restricted access, changes to the visual and aesthetic character of the area, and new competition from logging camp residents. On the other hand, the Northwest Baranof Project would have a positive effect on Sitka's economy if a small, local wood products industry was developed, or the harvest operations generate logging and other jobs for Sitka residents.

Alternative 4 would have the greatest positive impacts to a timber products industry and the greatest negative impacts to subsistence lifestyles and the tourism industry. Alternative 5, the no-action alternative, would have the least negative impact to subsistence lifestyles and the tourism industry, but would not support a local or regional wood products industry.

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Of the action alternatives, Alternative 3 would have the smallest negative impact to subsistence lifestyle because harvest activities are located north of Fish Bay and away from the subsistence areas closest to Sitka. Alternative 3 supplies the second lowest amount of wood to the timber industry.

Of the alternatives, Alternative 2 supplies the second largest amount of wood to the timber products industry. Although it would log a fair amount of area, it may be relatively acceptable to local subsistence hunters because it avoids logging in the locally termed "slaughter ridge" hunting area of Nakwasina Passage.

Although Alternative 1 harvests the least amount of timber of all the action alternatives, it spreads impacts throughout the Project Area. It is difficult to estimate if this would be considered a positive or negative effect by subsistence hunters or the tourism industry.

Non-clearcut harvest methods are being considered in all action alternatives and are being called for in units in which clearcutting would be visually unacceptable. Silvicultural prescriptions, however, call for clearcutting with reserves in many units in each action alternative. This may not be acceptable to a number of local Sitkans who oppose all clearcut logging in the areas close to Sitka.

Other Environmental Considerations

Probable Adverse Environmental Effects that Cannot be Avoided

Implementation of any action alternative may result in some adverse environmental effects that cannot be effectively mitigated or avoided if the action is to take place. The Forest Service designed the interdisciplinary procedure used to identify specific harvest units and roads to eliminate or lessen the significant adverse consequences. In addition, we intend to limit further the extent, severity, and duration of these effects by applying standards and guidelines, BMPs, mitigation measures, and a monitoring plan. We discussed the specific environmental effects of the alternatives earlier in this chapter, and the proposed mitigation measures are discussed in Appendix A. Although we avoided potentially adverse environmental effects in the formulation of the alternatives, some adverse impacts to the environment which cannot be completely mitigated may occur.

We will implement standards and guidelines, BMPs, and monitoring plans which prevent significant adverse effects to soil and water. However, the potential for adverse impacts does exist. Sediment production would occur as long as roads are being built and timber is harvested. Sediment would be produced by surface erosion, channel erosion, and mass movement.

Disturbance, displacement, or loss of wildlife may occur as a consequence of habitat loss and increased human activity in the Project Area. New road construction and the human activities associated with new access to areas previously unroaded may result in impacts to wildlife. Improved access into areas that previously had limited roads would have similar effects.

Ground-disturbing activities would temporarily increase sediment loads in some streams. This could displace fish, reduce anadromous and resident fish reproductive success, and alter aquatic invertebrate populations.

The amount and distribution of mature and old-growth stands would be reduced through implementation of any action alternative. The rate and severity of adverse impacts varies by alternative. Because some wildlife species rely on habitat conditions provided by old-growth stands, we can expect a reduction in the populations of some wildlife species. As old-growth and mature timber stands are converted to young even-aged stands, the capability of the Project Area to provide optimal habitat for old-growth-dependent species would be reduced. Fragmentation of old-growth habitats would increase.

Timber harvest and road construction in areas that are currently unroaded will alter natural characteristics of these areas. This will modify the recreational experiences that are offered by these areas. Some natural setting recreational opportunities will be lost by these actions.

The natural landscape will appear visually altered by timber harvest, particularly where logging activity is highly visible from travel routes. These adverse effects will eventually be reduced by growth of vegetation. Other impacts on the natural appearance of the

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landscape include roads and structures which are highly visible despite efforts to blend them with land forms and mitigate the effect by landscaping.

The intensity and duration of these effects depend on the alternative and the mitigation measures applied to protect the resources. Most unavoidable effects are expected to be short term (usually less than two years). In all cases, the effects would be managed to comply with established legal limits, such as a maximum time for regeneration. To check and reduce these effects, monitoring procedures and mitigation measures have been planned for those areas which may be affected. Certain monitoring procedures and mitigation measures are required by existing standards or guidelines. Specific mitigation measures for each alternative are included in Chapter 2.

Relationship Between Short-term Uses and Long-term Productivity

All alternatives would come under the mandate of the Multiple Use and Sustained Yield Act of 1960, which requires the Forest Service to manage National Forest lands for multiple uses (including timber, recreation, fish and wildlife, range, and watershed). All renewable resources are to be managed in such a way that they are available for future generations. The harvesting and use of standing timber can be considered a short-term use of a renewable resource. As a renewable resource, trees can be reestablished and grown again if the productivity of the land is not impaired.

Maintaining the productivity of the land is a long-term objective. All alternatives protect the long-term productivity of the Project Area through the use of specific standards and guidelines, mitigative measures, and BMPs. Long-term productivity could change as a result of various management activities proposed in the alternatives. Timber management activities will have direct, indirect, and cumulative effects on the economic, social, and biological environment.

Soil and water are two key factors in ecosystem productivity, and these resources will be protected in all alternatives to avoid damage which could take many decades to rectify. Sustained yield of timber, wildlife habitat, and other renewable resources all rely on maintaining long-term soil productivity. Quality and quantity of water from the Project Area may fluctuate as a result of short-term uses, but no long-term effects to the water resource are expected to occur as a result of timber management activities.

All alternatives would provide the fish and wildlife habitat necessary to maintain viable populations of existing native and desired nonnative vertebrate species throughout the Project Area. The abundance and diversity of wildlife species depend on the quality, quantity, and distribution of habitat, whether used for breeding, feeding, or resting. Management Indicator Species are used to represent the habitat requirements of all fish and wildlife species found in the Project Area. By managing habitats and populations of indicator species, the other species associated with the same habitat would also benefit. The alternatives provide standards, guidelines, and mitigation measures for maintaining long-term habitat and species productivity. The alternatives vary in the risk presented to both wildlife habitat and habitat capability.

Timber rotations are planned on most sites for approximately 100 years. The harvest of group selection units would not be completed for 160 to 200 years. To ensure adequate

production of timber, harvest has been scheduled to allow the earliest cut stands to mature into merchantable timber before the planned harvest of original stands is complete. When the first rotation is complete, mature, even-aged timber stands would be harvested again on a new rotation. The uneven-aged sites would have continuous cutting cycles in perpetuity. Management of the timber resource on these rotations could affect long-term productivity, depending on the intensity of silvicultural practices. Projected timber rotation lengths are not anticipated to affect long-term productivity. Mitigation measures are planned under all the alternatives to ensure future availability of other renewable resources as well.

Opportunities for dispersed recreation use, including hiking, camping, fishing, hunting, and viewing the natural scenery, will be maintained and increased for future generations. The setting in which these activities occur varies by alternative, but the long-term potential for the Project Area to provide a spectrum of recreation opportunities would be maintained in all alternatives.

Irreversible and Irretrievable Commitments of Resources

Irreversible commitments of resources are decisions to use, modify, or otherwise affect nonrenewable resources such as cultural resources or minerals. It could also apply to resources renewable only over a long period of time such as soil productivity or old-growth forests. Such commitments of resources are considered irreversible because the resource is affected to the point that renewal can occur only over a long period of time or at a great expense, or the resource has been destroyed or removed. All alternatives result in some irreversible commitments, although the extent and potential for adverse effects increase in alternatives which emphasize resource extraction and utilization.

Irretrievable commitments represent opportunities foregone for the period of the proposed actions, during which other resource utilization cannot be realized. These decisions are reversible, but the utilization opportunities foregone are irretrievable. Under multiple-use management, some irretrievable commitments of resources are unavoidable due to the mutually exclusive relationship between some resources. An example of such a commitment is development of logging camps and LTFs that will be removed at the completion of logging activities. These developments occupy approximately five to ten acres and include bunkhouses, mobile homes, fuel storage facilities and such. For the three to five years that such developments exist, the opportunity to utilize these areas otherwise is foregone and thus irretrievable.

The irreversible disturbance of some types of cultural resources may occur as a consequence of management activities. This would be especially true for subsurface resources that cannot be located through surface surveys. Even with mitigation, unanticipated or unavoidable disturbances can result in the loss of cultural values. Mitigation efforts such as data recovery involve the scientific and controlled destruction of a cultural resource site. Once undertaken, the effects are irreversible and the mitigation effort becomes an irretrievable commitment to the resource.

The uses of energy resources and the removal of mineral resources are irreversible commitments of resources. The use of rock resources for road and facility construction is an example (see Table 4-1). The use of fossil fuels during project administration activities

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would be an irreversible resource commitment (see Table 4-66). Alternatives vary by the amount of energy and mineral resources used; the no-action alternative abstains from the use of these nonrenewable resources at this time.

In unroaded areas, development activities such as timber harvest and the road construction associated with harvest will irreversibly reduce the potential amount of area that could be designated as a part of the National Wilderness Preservation System, managed as a Research Natural Area, or managed for other purposes requiring natural characteristics.

An irreversible loss occurs when forests of old-growth trees are harvested, fragmented, or removed for the construction of roads or other purposes. Old-growth stands provide key wildlife habitat and are also valued for ecological and aesthetic reasons. Because old-growth stands take more than 150 years to develop, the commitment of this resource to certain uses is reversible over a long period of time. Table 4-4 displays remaining old growth by alternative.

Some long-term uses of the land cause an irreversible loss of soil productivity. Examples of these uses include the establishment of arterial and collector roads and LTFs. Table 4-62 displays miles of new and reconstructed roads, and Table 4-64 displays LTFs.

Possible Conflicts with Plans and Policies of Other Jurisdictions

The regulations for implementing NEPA require a determination of possible conflicts between the proposed action and the objectives of Federal, State, and local land use plans, policies, and controls for the area. The major land use regulations of concern are the CZMA, Section 810 of the ANILCA, and the State of Alaska's Forest Practices Act. A discussion of each of these determinations is presented below.

Coastal Zone Management Act of 1976 (CZMA)

The CZMA was passed by Congress in 1976 and amended in 1990. This law, as amended, requires Federal agencies conducting activities or undertaking development which effect the coastal zone to ensure that the activities or developments are consistent with the enforceable policies of approved State coastal management programs to the maximum extent practicable. The State of Alaska passed the Alaska Coastal Management Act in 1977 to establish a program that meets the requirements of the CZMA. It contains the standards and criteria for a determination of consistence for activities within the coastal zone.

The Alaska Coastal Management Program (ACMP), in turn, encourages local coastal communities to develop local policies that guide the development of coastal resources. The City and Borough of Sitka participates in the program and has established the Sitka Coastal Management Citizens Committee, of which the Forest Service is a member. The City and Borough has also developed the Sitka District Coastal Management Program, which has as its goal "... to achieve wise use of the land and water resources of the coastal area and to balance economic growth with ecological and cultural values, so as to maintain and protect Sitka's coastal resources for the beneficial use and enjoyment for

present and future generations.” The Project Area lies entirely within the boundary for the Sitka Coastal District.

The consistency evaluation will consider: Alaska Statute Title 46, Water, Air, Energy, and Environmental Conservation; Alaska Forest Practices Act of 1990; and the Sitka District Coastal Management Program.

The Forest Service has evaluated the alternatives to ensure that the activities and developments affecting the coastal zone are consistent with approved coastal management programs to the maximum extent practicable. The standards and guidelines for timber management activities in the Project Area meet or exceed those indicated in the Alaska Forest Practices Act and the ACMP.

Evaluation of the proposed activities against the enforceable policies for activities within the coastal zone results in a finding that these activities are consistent with the ACMP to the maximum extent practicable. The State of Alaska Division of Governmental Coordination will complete a consistency review of the preferred alternative.

Alaska National Interest Lands Conservation Act of 1980 (ANILCA)

Under Section 810 of the ANILCA, agencies are required to evaluate the effects of proposed actions on subsistence uses of Federal land and to determine if the proposed action may significantly restrict subsistence opportunities. Refer to the Subsistence section of this chapter for the evaluation of impacts to subsistence use as a result of the alternatives.

State of Alaska’s Forest Practices Act of 1990

On May 11, 1990, Governor Cowper approved the legislature’s major revision of the State’s Forest Practices Act. The revised act significantly increases the State’s role in providing protection and management for important forest resources on State and private lands. The revised Forest Practices Act will also affect National Forest management through its relationship to the ACMP and the Federal CZMA (see above discussion).

For National Forest timber operations such as proposed for the Northwest Baranof Project, the effect of the revised Forest Practices Act is essentially two-fold. First, it clarifies that the revised Forest Practices Act is the standard which must be used for evaluating timber harvest activities on Federal lands for purposes of determining consistency, to the maximum extent practicable, with the ACMP. Second, it calls for minimum 100-foot buffers on all Class I streams, and it recognizes that consistency to the maximum extent possible for purposes of the ACMP is attainable in Federal timber harvest activities using specific methodologies which may differ from those required by the revised Forest Practices Act or its implementing regulations.

The TTRA prohibits commercial timber harvesting within buffer zones established on all Class I streams and those Class II streams which flow directly into Class I streams. Buffer

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zones have a minimum width of 100-feet horizontal distance from the edge of either side of the stream.

Energy Requirements and Conservation Potential of Alternatives

The implementation of the proposed actions in the Project Area will require the expenditure of energy (e.g., fuel consumption). The amount of energy used varies by alternative based on timber volume harvested and miles of road constructed. The direct effect of the alternatives on energy requirements would be attributed to timber harvest, road construction, and travel necessary to administer the timber sale. Indirect energy requirements include processing wood products and the transport of the products to secondary processors and consumers. The estimated total fuel consumption required for each alternative is displayed in Table 4-66.

Table 4-66
Estimated Fuel Consumption (Millions of Gallons), by Alternative

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
Preparation and Administration (1.56 gallons/mbf)	0.06	0.08	0.06	0.10	0
Logging and Transportation (14.8 gallons/mbf)	0.54	0.77	0.57	0.99	0
Helicopter Logging (36.2 gallons/mbf)	1.32	1.88	1.40	2.42	0
Road Construction and Maintenance (4,000 gallons/mile)	0.16	0.16	0.10	0.25	0
Total Consumption	2.08	2.89	2.13	3.76	0

*Note: Estimated fuel consumption based on consumption per mbf of sawlog volume and use of an S-64E helicopter.

Source: Mork 1995.

Natural or Depletable Resource Requirements and Conservation of Alternatives

All alternatives considered in detail are designed to conform to applicable laws and regulations pertaining to natural or depletable resources, including minerals and energy resources. Regulation of mineral and energy activities on the National Forest, under the U.S. Mining Laws Act of May 1872 and the Mineral Leasing Act of February 1920, is shared with the BLM. The demand for access to National Forest lands for the purpose of mineral and energy exploration and development is expected to increase over time.

The action alternatives propose road construction that will increase opportunities for access to the National Forest within the Project Area. This increased access may result in increased activity with regard to potential mineral or energy resource occurrences.

Urban Quality, Historic and Cultural Resources, and the Design of the Built Environment

The Project Area contains no urban areas or built-up areas of any kind. Therefore, the only applicable concern under this topic is with historic and cultural resources. The goal of the Forest Service's Cultural Resource Management Program is to preserve significant cultural resources in their field setting and ensure they remain available in the future for research, social/cultural purposes, recreation, and education. There are adequate standards, guidelines, and procedures to protect cultural resources and to meet the goals of the Cultural Resource Management Program. Cultural resources and the proposed project design are discussed in the Heritage Resources section of this chapter.

Effects of Alternatives on Consumers, Civil Rights, Minorities, and Women

All Forest Service actions have the potential to produce some form of impact, positive and/or negative, on the civil rights of individuals or groups, including minorities and women. The need to conduct an analysis of this potential impact is required by Forest Service Manual and Handbook direction. The purpose of the impact analysis is to determine the scope, intensity, duration, and direction of impacts resulting from a proposed action. For environmental or natural resource actions as proposed for the Northwest Baranof Project, the civil rights impact analysis is an integral part of the procedures and variables associated with the social impact analysis. This analysis is discussed in the Economic and Social Values section of this chapter.

The effect of the alternatives on consumers is reflected in the discussion of the various goods and services supplied as a result of the proposed actions. This analysis occurs throughout this chapter as an integral part of the analysis of the effects on other components of the environment.

Effects of Alternatives on Prime Farm Land, Rangeland, and Forest Land

All alternatives are in keeping with the intent of Secretary of Agriculture Memorandum 1827 for prime land. The Project Area does not contain any prime farm lands or rangelands. Prime forest land does not apply to lands within the National Forest system. In all alternatives, lands administered by the Forest Service would be managed with a sensitivity to the effects on adjacent lands.

List of Preparers

List of Preparers

Theodore Allio, Transportation Planner

Certificate, Transportation Analysis, Oregon State University

Certificate, Logging System Analysis, Oregon State University

Forest Service: 30 years

Transportation Planner, Tongass NF, Chatham Area (19 years)

Civil Engineer Technician, Hiawatha NF (3 years)

Survey Technician, Allegheny NF (8 years)

Gordon Anderson, Planning Team Leader (through January 1995)

B.S., Forestry Management, Utah State University, 1971

Forest Service: 32 years

Timber Planner, Tongass NF, Chatham Area (6½ years)

Timber Management Assistant, Ochoco NF (5 years)

Assistant Interdisciplinary Team Leader, Forest Plan, Siskiyou NF (5 years)

Presale Forester - Shelton Ranger District, Olympic NF (6 years)

Presale Technician, Sweet Home Ranger District, Willamette NF (5 years)

Ronald L. Baer, Geologist

B.S., Geology, California State University

A.A., Math & Physical Science, American River College, 1971

Certificate, Mineral Examiner

Certificate, Mineral Review Examiner

Forest Service: 19 years

Suzanne P. Beall, Silviculturist

B.S., Forest Resources, University of Washington, 1982

Silviculture Institute XIV, 1990-1991

Forest Service: 12 years

District Silviculturist, Tongass NF, Sitka RD (1 year)

Timber Stand Improvement Forester, Siuslaw NF, Waldport RD (5 years)

Reforestation Forester, Mt. Baker-Snoqualmie NF, White River RD (6 years)

Stewart Bentley, Biological Technician

B.S., Oregon State University, 1980

Forest Service: 5 seasons

Biological Technician, Tongass NF, Sitka RD (2 seasons)

Biological Technician, Tongass NF, Ketchikan Area (3 seasons)

Patrick Bower, Archaeologist

B.A., Anthropology, Colorado State University, 1983

Forest Service: 2 years 7 months

Archaeologist, Tongass NF (2 years)

Archaeologist, Stanislaus NF (7 months)

Other Relevant Employment:

Archaeologist, Western Wyoming College (4 years)

Archaeologist, Hawaii, Alaska, Colorado, Guam, Utah and North Dakota (4 years)

Mary H. Dalton, Forestry Technician

B.S., Forestry Resource Management, Virginia Polytechnic Institute Virginia State University, 1979

Forest Service: 15 years

Pre-Construction Survey Crew Chief, Tongass NF, Chatham Area (6 years)

Pre-Sale Layout Crew Leader, Tongass NF, Chatham Area (2 years)

Silviculture Stand Exam Crew Leader, Tongass NF, Chatham Area (3 years)

Planning Team - Timber/Resource Technician, Tongass NF, Chatham Area (1 year)

Ground Reconnaissance Inventory Technician, Tongass NF, Chatham Area (3 years)

Brenda Dick, Writer - Editor

B.A., Business Administration, Maryville College, 1985

Forest Service: 6 years

Writer/Editor, Tongass NF, Chatham Area (3 years)

Information Assistant, Tongass NF, Chatham Area (3 years)

William R. Dougan, Silviculturist

B.S., Forest Resource Management, Humboldt State University, 1978

Graduate Study, Silviculture, University of Washington/Oregon State University

Certified Silviculturist, Forest Service, Regions 6 and 10, 1989-present

Forest Service: 18 years

Assistant Forest Silviculturist, Tongass NF, Chatham Area (4 years)

Silviculturist, Rogue River NF, Prospect RD (2 years)

Reforestation Specialist, Siuslaw NF, Waldport RD (6 years)

TSI/Reforestation Technician, Siuslaw NF, Waldport RD (4 years)

Presale/Timber Layout Technician, Mt. Baker-Snoqualmie NF, Skykomish RD (2 years)

Theodore W. Falkner, Civil Engineering Technician

Forestry, Humboldt State University, 1956-1960

Civil Engineering, Humboldt State University, 1960-1962

Civil Engineering, Los Angeles State, 1964-1966

Forest Service: 33 years

GIS Coordinator, Tongass NF, Chatham Area (4 years)

Planner, Tongass NF, Chatham Area (5 years)

Transportation Planner and Logging Engineer, Klamath NF (12 years)

Transportation Planner and Logging Engineer, Sequoia NF (4 years)

Survey Technician, Design Engineer, Angeles NF (4 years)

Survey Technician, Klamath NF (4 years)

Bradley Flynn, Recreation Planner

B.S., Recreation, University of Idaho, 1977

A.S., Natural Resources Conservation, State University of New York, 1975

Forest Service: 15 years

Recreation Planner, Tongass NF, Sitka RD (1 year)

Recreation Planner, Tongass NF, Chatham Area (1 year)

Civil Engineering Technician, Tongass NF, Chatham Area (2 years)

Civil Engineering Technician, Nezperce NF (9 years)

Civil Engineering Technician, Horse Creek Research Project, Nezperce NF and Intermountain Research Station (2 years)

Forestry Technician (Recreation), Nezperce NF, Elk City RD (6 months)

Cindy Hartmann, Biologist

B.S., Fisheries and Wildlife Biology, Iowa State University, 1979

Forest Service: 13 years

Wildlife Biologist, Tongass NF, Chatham Area (3½ years)

Fisheries Biologist, Tongass NF, Ketchikan Area (8½ years)

Biological Technician, Washington Office, WL&F Staff (2 years)

Other Relevant Employment:

National Wildlife Federation Conservation Intern (6 months)

Biologist ERT, Environmental Consulting Firm (9 months)

Conservation Aid, Iowa Conservation Commission (7 months)

Research Aid, Iowa State University (3 months)

Robert H. Huecker, Soil Scientist

B.S., Resource Management, University of Wisconsin-Stevens Point, 1976

Forest Service: 16 years

Soil Scientist, Tongass NF, Chatham Area (7 years)

District Soil Scientist, Tongass NF, Thorne Bay RD (3½ years)

Soil Scientist, Chugach NF (5½ years)

Other Employment:

Soil Conservationist, Dunn County Soil and Water Conservation District,

Menomonie, Wisconsin (15 months)

Karen Iwamoto, Archeologist

B.A., Anthropology, Oregon State University, 1979

B.A., History, Oregon State University, 1979

Forest Service: 11 years

Archeologist, Tongass NF, Chatham Area (10 years)

Archeology Technician, Malhuer NF (1 year)

Other Relevant Employment:

Archeology Technician, Burley District, BLM (1 year)

Independent Contractor, Archeology, Pacific NW and SE (2 years)

Sheila Jacobson, Fisheries Technician

B.S., Fisheries and Wildlife Management, University of Missouri, Columbia, 1990

Graduate study, Fisheries, University of Alaska, 1992

Forest Service: 4½ years

Fisheries Technician, Tongass NF, Chatham Area, Sitka RD (4½ years)

Dale Kanen, Acting Planning Team Leader (January - May 1994)

B.S., University of Maryland, 1974

Forest Service: 21 years

Subsistence Program Manager, Tongass NF, Chatham Area (4 years)

Civil Engineer, Chugach NF (2 years)

Civil Engineer, Tongass NF (2 years)

Civil Engineer, Chugach NF (10 years)

Civil Engineer, Tongass NF (3 years)

Daniel Kelliher, Hydrologist

B.S., Hydrology, University of New Hampshire, 1977
Forest Service: 16 years
Hydrologist, Tongass NF, Chatham Area (16 years)

Gregory M. Killinger, Fisheries Biologist

M.S., Natural Resources Management, VPI, 1994
B.S., Wildlife Biology, Oregon State University, 1983
Forest Service: 11 years
Fish Biologist, Tongass NF, Sitka RD (6 years)
Biological Technician, Tongass NF, Sitka RD (3 years)
Biological Technician, Forestry Sciences Laboratory, Juneau (6 months)
Hydrological/Biological Technician, Tongass NF, Chatham Area (1 year)
Hydrological/Biological Volunteer, Tongass NF, Chatham Area (1 year)

Bill Lorenz, Fisheries Biologist

M.S., Fisheries Biology, University of Alaska
B.S., Wildlife Sciences, Utah State University
Forest Service: 15 years
FWWES Staff Assistant, Tongass NF, Sitka RD (7 years)
Fisheries Biologist, Tongass NF, Hoonah RD (1 year)
Biological Tech, Chugach NF, Cordova RD (3 years)
Fisheries Biologist, Tongass NF, Chatham Area (1 year)
Coop Ed Fisheries, Chugach NF, Cordova RD (3 years)

Leon Mork, Forester

B.S., Forest Management, Oregon State University, 1976
Forest Engineering Institute, Oregon State University, 1984
Forest Service: 25 years
ID Team Timber/Logging Systems Specialist, Tongass NF, Chatham Area (1 year)
Resource Planner/IDT Leader/Logging Systems, Willamette NF, Oakridge RD (5 years)
Genetics/Timber Stand Improvement, Deschutes NF, Crescent RD (2 years)
Planning/Recon/IDT Leader/Logging Systems, Deschutes NF, Crescent RD (7 years)
Sale Planning/Environmental Analysis/Sale Layout/Recreation Planner, Deschutes NF, Crescent RD (2 years)
Presale/Logging Systems, Willamette NF, Sweet Home RD (4 years)
Fire Management/Reforestation/Recreation, Willamette NF, Sweet Home RD (4 years)

John B. Morrell, Lands Forester

M.S., Forestry, California State University, Humboldt, 1976
Master of Forest Resources, Outdoor Recreation Emphasis, University Of Washington
B.S., University of Montana, 1967
Forest Service: 16 years
Lands Forester, Tongass NF, Chatham Area (9 years)
Resource Assistant, Tongass NF, Thorne Bay RD (2 years)
Resource Assistant, Tongass NF, North Prince of Wales RD (1½ years)
Forester/Recreation Assistant, Packwood RD (3½ years)
Research Assistant, Pacific Northwest Experimental Station, Seattle

Kathleen Morse, Economist

B.S., Natural Resource Economics, Montana State University

Graduate Study, Coastal Zone Management, University of Washington

Forest Service/Private Industry: 4 years

Debbie Muenster, Archaeological Technician

B.A., Anthropology, University of New Mexico, 1987

Forest Service, 3 years

Archeological Technician, Tongass NF, Chatham Area (3 seasons)

Archeological Technician, Stanislaus NF, Graveland Area (1 season)

Recreation Technician, Routt NF, Kremling Area (3 years)

Rachel Myron, Archaeologist

B.A. Anthropology, The Colorado College, 1985

Graduate Study, Cultural Resource Management, University of Nevada, Reno 1995

Forest Service, 6 years

District Archeologist, Tongass NF, Sitka RD (1 year)

Archeologist, Tongass NF, Chatham Area (2½ years)

Archeological Technician, Tongass NF, Chatham Area (3 years)

Other Relevant Experience

Museum Technician, Sitka National Historical Park (6 months)

Archeological Technician, Crow Canyon Archeological Center, Cortez, Colorado
(6 months)

Eric Ouderkirk, Landscape Architect

M.L.A., University of Michigan, 1989

M.U.P., University of Michigan, 1987

B.A., Albion College, 1982

Forest Service: 2 years

Landscape Architect, Tongass NF, Chatham Area (2 years)

Other Relevant Employment

Landscape Architect, Carlisle Associates, Ann Arbor, MI (2½ years)

Greg R. Peterson, Logging Systems Specialist

B.S., Forest Management, Iowa State University, 1972

Forest Service: 8 years

Forester, Tongass NF, Chatham Area (1½ years)

Construction Inspector, Fremont NF, Paisley RD (1½ years)

Construction Inspector, Gifford Pinchot NF (2 years)

Presale Forestry Technician, Gifford Pinchot NF, Wind River RD (1 year)

Research Forester, PSW Forest and Range Experimental Station (2 years)

Other Relevant Employment

Washington State Department of Natural Resources (5 years)

Sealaska Corporation (1 year)

Alaska Pulp Corporation (3 years)

Gerry Schauwecker, LTF Coordinator

B.S., Civil Engineering, Marquette University, 1964

Forest Service: 29 years

Permit Coordinator, Tongass NF, Chatham Area (2 years)

Construction Engineer, Tongass NF, Chatham Area (27 years)

Terry Suminski, Fisheries Technician

B.S., Fisheries and Wildlife Management, Michigan State University, 1988

Forest Service: 10 years

Wildlife Biologist, Tongass NF, Sitka RD Planning Team, 4 months

Biological Sciences Technician, Tongass NF, Sitka RD, 7 years

Biological Sciences Technician (Wildlife), Chugach NF, Seward RD, 4 months

Biological Sciences Technician (Fisheries), Chugach NF, Cordova RD, 8 months

Fisheries and Wildlife Volunteer, Tongass NF, Sitka RD, 2 field seasons

James M. Thomas, Planning Team Leader

B.A., Ecology, University of Colorado, 1974

Graduate Study, Forestry/Planning, Colorado State University, 1981

Graduate Study, Geology, Western State College, Colorado, 1979

Forest Service: 17 years

ID Team Leader, Tongass NF, Sitka RD (1 year)

Assistant ID Team Leader, Tongass NF, Chatham Area (3 years)

Forester, Planning Team, Tongass NF, Sitka RD (2 years)

Information Systems Group Leader, Tongass NF, Chatham Area (3 years)

Information Systems Group Leader, Arapaho and Roosevelt NF (2 years)

Operations Research Analyst, Shawnee NF (2 years)

Natural Resource Planner, White River NF (1 year)

Forestry Technician, Arapaho and Roosevelt NF, Clear Creek RD (2 seasons)

Wilderness Planner, San Juan and Rio Grande NF (1 year)

Wilderness Planner, White River NF, Holy Cross RD (1 year)

Gene Virtue, Civil Engineering Technician

A.A., Forestry/Forest Engineering

Forest Service: 15 years

Civil Engineering Technician, Tongass NF, Chatham Area (1 year)

Civil Engineering Technician, Klamath NF (14 years)

Lisa Winn, Forester

B.S., Forest Management, University of California, Berkeley, 1990

Silviculture Institute XVII, 1994-1995

Forest Service: 8 years

Forester/Silviculturist, Tongass NF, Sitka RD (1 year)

Presale Forester, Tongass NF, Sitka RD (3 years)

Reforestation Forester, Stanislaus NF, Mi-Wok RD (4 years)

Other Assistance:

Heather Barnes, Geographic Information Systems Technician
Kathy Brown, Archaeologist
Jayson Christner, Forestry Technician
Rob Deyerberg, Recreation Specialist
Cheryl Fujishin, Computer Clerk
Harlan Hawks, Lead Forestry Technician/Computer Specialist
Michelle Hawks, Geographical Information Systems Technician
Mike Hilton, Archaeological Technician
Jean Kleinert, Computer Clerk
Brett Light, Fisheries Technician
Virginia Lutz, Geographical Information Systems Technician
Yael Martin, Forestry Technician
Kathy McCovey, Forester
Pat Meek, Archaeological Technician
Lisa Stocker, Computer Clerk
Carolyn Williams, Biological Technician

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Scott Brylinsky, Tidal Rush Wilderness Skills
Don Schmiede, Tongass Hunting & Fishing Coalition
Dave Milne, US Helilog
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Eric Huggans, Western States Corp.
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City & Borough of Sitka Mayor
City & Borough of Sitka Planning & Zoning Committee
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City of Pelican
City of Pelican Mayor
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The Greater Sitka Chamber of Com. Board of Directors
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Kent P. Nicholson, Ketchikan Pulp Company Contract Manager
Daily Sitka Sentinel
High Country News
Kerry Beebe, KFSK Radio
Petersburg Pilot
Sitka News Bureau
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Nels Lawson, Alaska Native Brotherhood President, Sitka Camp #1
Cyrus E. Peck, Alaska Native Brotherhood Grand President Emeritus
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Walter A. Soboloff, Alaska Native Brotherhood Executive Committee
Ron Williams, Alaska Native Brotherhood Grand Camp President
Isabelle Brady, Alaska Native Sisterhood Camp #4 President
Alberta Shaquanie, Alaska Native Sisterhood President, Kake Camp #10
Eileen Wagner, Alaska Native Sisterhood President, Tenakee Camp #76
Andrew Ebona, Sealaska
Ray Nielsen, Sitka Tribe of Alaska
Jude Pate, Sitka Tribe of Alaska
Lawrence Widmark, Sitka Tribe of Alaska President
Dr. Ted Wright, Sitka Tribe of Alaska General Manager
Tlingit-Haida Central Council Tribal Operations Officer
Edward K. Thomas, Tlingit-Haida Central Council President
Clarence Jackson, Sr., Sealaska Corporation
Mike Brown, Sealaska Timber
Klawock Heenya Corporation
Garner Wear, Klawock Timber - Alaska
Coyne Vanderjack, Klukwan Forest Products
Bob Loiselle, Klukwan Forest Products, Inc.
Kootznoowoo, Inc.
Herman Kitka, SE Native Subsistence Commission
Matthew Kookesh, Jr., SE Native Subsistence Commission
Harold Martin, SE Native Subsistence Commission President
Robert Willard, SE Native Subsistence Commission
Don Young, U.S. Representative
Frank Murkowski, U.S. Senator
Ted Stevens, U.S. Senator
US Coast Guard, 17th District Office Commanding Officer
US Coast Guard, Sitka Air Station Commanding Officer
USDI National Park Service Sitka National Historical Park
Kathy Veit, US Environmental Protection Agency Chief Program Coordination Branch

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to Whom Copies of This Statement Were Sent**

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George Hausserman		

Agencies and Organizations Receiving the Complete FEIS and ROD

Robert Allen, Allen Marine, Inc.
American Rivers
Angoon Public School Library
Larry Edwards, Baidarka Boats
Michael H. Trotter, Beyond Boundaries Expedition
Avrum Gross, Chatham Cannery, Ltd.
Friends of Southeast's Future
Mike Holloway, Friends of the Earth
Greenpeace
Michael Galginaitis, Impact Assessment, Inc.
Ilene Brooks, LJL Alaska Research
Joris Naiman, Lewis and Clark College Northwestern Law School
Vivian Menaker, Lynn Canal Conservation, Inc.
Pacific Cascade Ltd.
Elva Gonzalez, Perkins Coie
James F. Clark, Robertson, Monagle & Eastaugh
D. Elizabeth Cuadra, Robertson, Monagle & Eastaugh
Del Cesar, SE Alaska Regional Health Corp.
John Sisk, SEACC Executive Director
Bradley L. Shaffer, Shaffer & Harrington
Tom Waldo, Sierra Club Legal Defense Fund
Dick Buhler, Silver Bay Logging
Brian McNitt, Sitka Conservation Society
Bob Meyer, Southeast Marine
Robert Dewey, Territorial Sportsmen, Inc.
Michael McIntosh, The McIntosh Foundation

List of Agencies, Organizations, and Persons to Whom Copies of This Statement Were Sent

James H. Bilbray, U.S. Congressman
Jack Kruse, Dr., University of Alaska, Anchorage Institute of Soc. & Econ. Research
W.R. Tonsgard, W.R. Tonsgard Logging
Martin Weinstein, Weinstein Consulting Services
World Wildlife Fund
AK Dept of Commerce & Econ Develop Division of Economic Development
AK Dept of Commerce & Econ Develop Office of the Commissioner
AK Dept of Community & Regional Aff Office of the Commissioner
AK Dept of Environ Conservation Division of Environmental Quality
AK Dept of Environ Conservation Office of the Commissioner
AK Dept of Environ Conservation Public Information Office
James Clare, AK Dept of Environ Conservation Sitka District Office
Program Coordinator, AK Dept of Environ Conservation SE Regional Office
AK Dept of Fish & Game Division of Commercial Fisheries
AK Dept of Fish & Game Division of Sport Fish
AK Dept of Fish & Game Division of Subsistence
AK Dept of Fish & Game Division of Subsistence
AK Dept of Fish & Game Division of Wildlife Conservation
AK Dept of Fish & Game Office of the Commissioner
AK Dept of Fish & Game Sitka Office, Sport Fish Division
Jim Faro, AK Dept of Fish & Game Sitka Office, Wildlife Conservation
Dave Hardy, AK Dept of Fish & Game Sitka Office, Habitat Division
Ron Josephson, AK Dept of Fish & Game
Lana Shea, AK Dept of Fish & Game Division of Habitat
AK Dept of Natural Resources Division of Forestry
AK Dept of Natural Resources Division of Land
AK Dept of Natural Resources Division of Parks & Outdoor Rec
AK Dept of Natural Resources Division of Parks & Outdoor Rec
AK Dept of Natural Resources Division of Parks & Outdoor Rec
AK Dept of Natural Resources Division of Water
AK Dept of Natural Resources Office of the Commissioner
AK Dept of Natural Resources State Historic Preservation Officer
Marlys E. Tedin, AK Dept of Natural Resources Sitka State Parks Advisory Board
Director, AK Office of Management & Budget Div. of Governmental Coordination
Lorraine Marshall, AK Office of Management & Budget Div. of Governmental Coordination
Christine Valentine, AK Office of Management and Budget Project Review Coordinator
Mark Inghram, Dept. of Natural Resources Div. of Mining & Water Management
Charles Johnson, Alaska Biological Research, Inc.
Jeoff McNaughton, Koncor Forest Products
Marlene Campbell, City & Borough of Sitka ACMP Coordinator
City of Angoon Mayor
George Johnson, Jr., City of Angoon ACMP Coordinator
City of Tenakee Springs
Louis Heins, City of Tenakee Springs Mayor
City of Wrangell
Sitka Chamber of Commerce
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Douglas Public Library
Elfin Cove Public Library
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Ketchikan Public Library
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Petersburg Public Library
Sheldon Jackson College Stratton Library
Skagway Public Library
Tenakee Springs Public Library
Thorne Bay Community Library
Wrangell Public Library
Chuck Oliver, Alaska Pulp Corp.
Alaska Pulp Corp., Woods Division
Brian Brown, Alaska Pulp Corp., Woods Division Engineer
Ralph Fenner, Alaska Pulp Corp., Woods Division Log Department Supervisor
Frank Ropell, Alaska Pulp Corporation
Troy Reinhart, Ketchikan Pulp Company Employee Affairs & Public Relations
June Christle, Logger's Legal Defense Fund
Bud Stewart, Whitestone Logging Co.
News Director, KCAW-Raven Radio
Lavina Jack, Alaska Native Sisterhood President, Angoon Camp #7
Harold Martin, Southeast Native Subsistence Comm. c/o Tlingit & Haida Central Council
Grenelda Edmiston, Tlingit & Haida Central Council ANILCA Specialist
Leo Barlow, Sealaska Corporation
Robert W. Loescher, Sealaska Corporation Resource Management
Frank Sharp, Kootznوو, Inc. President
Federal Energy Regulatory Commission Advisor on Environmental Quality
US Coast Guard, EI Branch, Marine Environ. & Protect. Division
US Army Corps of Engineers Headquarters, Attn: DAEN-ZCE
US Army Corps of Engineers Regulatory Branch
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US Department of Interior
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US Department of Commerce, NOAA Ecology & Conservation Office
Steve Pennoyer, US Department of Commerce, NOAA National Marine Fisheries Service
US Environmental Protection Agency Alaska Operations Office
US Environmental Protection Agency EIS Review Coordinator, Region X
US Environmental Protection Agency Office of Environmental Review
Forestry Sciences Laboratory, Juneau Office
USDA Forest Service Admiralty National Monument
USDA Forest Service Alaska Region Public Affairs
USDA Forest Service Hoonah Ranger District
USDA Forest Service Information Center, Centennial Hall
USDA Forest Service Juneau Ranger District
USDA Forest Service Office of Environmental Coordination
USDA Forest Service Tongass NF, Ketchikan Area
USDA Forest Service Tongass NF, Stikine Area
USDA Forest Service Wrangell Ranger District
USDA Forest Service Yakutat Ranger District

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to Whom Copies of This Statement Were Sent**

USDA Forest Service, Alaska Region Planning, Programming and Budgeting
US Fish & Wildlife Service Subsistence Management Division
Supervisor, US Fish & Wildlife Service
Susan Walker, US Fish & Wildlife Service Fisheries Division
US Advis. Council on Historic Pres. Office of Program Review & Education

Literature Cited

Literature Cited

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Glossary

Glossary

Common Abbreviations

ACMP	Alaska Coastal Management Program
ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish and Game
ANCSA	Alaska Native Claims Settlement Act of 1971
ANILCA	Alaska National Interest Lands Conservation Act of 1980
BMP	Best Management Practice
CFL	Commercial Forest Land
CFR	Code of Federal Regulations
COE	Army Corps of Engineers
CZMA	Coastal Zone Management Act of 1976
DBH	Diameter at Breast Height
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
EVC	Existing/Expected Visual Condition
FSH	Forest Service Handbook
GIS	Geographic Information System
GMU	Game Management Unit
HILTS	Helicopter Insertion Log Transfer Site
IDT	Interdisciplinary Team
LTF	Log Transfer Facility
LUD	Land Use Designation
LWD	Large Woody Debris
mbf	One thousand board feet
mmbf	One million board feet
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act of 1969 (as amended)
NFMA	National Forest Management Act
NMFS	National Marine Fisheries Service
NOI	Notice of Intent
ORV	Off-Road Vehicle
RMO	Road Management Objective
ROD	Record of Decision
ROS	Recreation Opportunity Spectrum
SHPO	State Historic Preservation Officer
TLMP	Tongass Land Management Plan
TRUCS	Tongass Resource Use Cooperative Survey
TTRA	Tongass Timber Reform Act
USDA	United States Department of Agriculture
USDI	United States Department of the Interior
USFWS	United States Fish and Wildlife Service
VCU	Value Comparison Unit
WAA	Wildlife Analysis Area

Alaska National Interest Lands Conservation Act (ANILCA)

Passed by Congress in 1980, this legislation designated 14 National Forest wilderness areas in Southeast Alaska. In section 705(a) Congress directed that at least \$40 million be made available annually to the Tongass Timber Supply Fund to maintain the timber supply from the Tongass National Forest at a rate of 4.5 billion board feet per decade. Section 810 requires evaluations of subsistence impacts before changing the use of these lands.

Glossary

Alaska Native Claims Settlement Act (ANCSA)

Approved December 18, 1971, ANCSA provides for the settlement of certain land claims of Alaska Natives and for other purposes.

Allowable Sale Quantity (ASQ)

The maximum quantity of timber that may be sold each decade from the Tongass National Forest. This quantity, expressed as a board foot measure, is calculated per timber utilization standards specified in the Alaska Regional Guide, by the number and type of acres available for timber management, and by the intensity of timber management. The ASQ was calculated at 4.5 billion board feet per decade.

Alpine/Subalpine Habitat

The region found on a mountain peak above 1,500-foot elevation.

Amenity Values

Amenities are resources that are pleasing to the mind or senses. Amenity uses or values cannot be easily measured in dollars. Recreation and scenic quality are examples of amenity values.

Anadromous Fish

Anadromous fish spend part of their lives in fresh water and part of their lives in salt water. Anadromous fish include pink, chum, coho, sockeye, and king salmon, and steelhead trout. There are also anadromous Dolly Varden char.

Arterial Road

A forest road that provides service to large land areas and usually connects with other arterial roads or public highways.

Beach Fringe Habitat

Habitat that occurs from the intertidal zone inland 500 feet, and islands of less than 50 acres.

Benthic Habitat

The substrate and organisms on the bottom of marine environments.

Best Management Practice

A practice or combination of practices that, after problem assessment, examination of alternative practices, and appropriate public participation is determined by a state to be the most effective and practicable means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals. A BMP is an action-initiating mechanism which eventually leads to the interdisciplinary development of a site-specific prescription.

Buffer

The Tongass Timber Reform Act requires that timber harvest be prohibited in an area no less than 100 feet in width on each side of all Class I streams and Class II streams which flow directly into Class I streams. This 100-foot area is known as a buffer.

Candidate Species

Those species of plant or animal which are under consideration (by US Fish and Wildlife Service and National Marine Fisheries Service) for listing as threatened or endangered but which are provided no statutory protection under the Endangered Species Act.

Category 2 Species

One of three categories of Candidate Species. Category 2 are those for which there is information indicating the species might qualify for endangered or threatened status.

Glossary

Clearcut	A method of regeneration cutting in which the old crop is completely cut in designated patches. Regeneration in the Alaska Region is usually natural, and the size of the clearcut area rarely exceeds 100 acres.
Collector Road	A forest road that serves smaller land areas than an arterial road and usually connects forest arterial roads to forest local roads or terminal facilities. Collector roads are usually long-term facilities.
Commercial Fishery	Fish, shellfish, or other fishery resources taken or possessed within a designated area for commercial purposes.
Commercial Forest Land (CFL)	<p>Forest land that is producing or capable of producing crops of industrial wood and is not withdrawn from timber utilization by statute or administrative regulation. This includes areas suitable for management and generally capable of producing in excess of 20 cubic feet per acre of annual growth or in excess of 8,000 board feet net volume per acre. It includes accessible and inaccessible areas.</p> <ul style="list-style-type: none">• Standard CFL: Timber that can be economically harvested with locally available logging systems such as highlead or short-span skyline.• Nonstandard CFL: Timber that cannot be harvested with locally available logging systems and would require the use of other logging systems such as helicopter or longspan skyline.
Comodity Values	Commodities are resources that have a dollar or market value. Timber and minerals are examples of commodity values.
Conveyance	The passing of the title of a property from one owner to another.
Cruise	Refers to the general activity as opposed to a specific method of determining timber volume and quality.
Cumulative Effects	The impacts on the environment resulting from the addition of the incremental impacts of past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions. Cumulative effects can result from individually minor but collectively significant actions occurring over time.
Direct Employment	The jobs that are immediately associated with a Long-Term Contract timber sale, for example logging, sawmills, and pulp mills.
Environmental Impact Statement	Section 102 of the National Environmental Policy Act (NEPA) requires that a statement of environmental effects for a major Federal action be released to the public and other agencies for comment and review prior to a final management decision.

Glossary

Ecological Approach

Natural resource planning and management activities that assure consideration of the relationship between all organisms (including humans) and their environment.

Ecological Process

The actions or events that link organisms (including humans) and their environment, such as disturbance, successional development, nutrient cycling, carbon sequestration, productivity, and decay.

Ecosystem

Living organisms interacting with each other and with their physical environment, usually described as an area for which it is meaningful to address these interrelationships.

Ecosystem Management

The use of an ecological approach in natural resource management wherein activities are considered within the context of biological, physical, economic, and social interactions to produce desired resource values, products, services, and conditions in ways that also sustain the diversity and productivity of the ecosystems being managed.

Endangered Species

A species of plant or animal which is in danger of extinction throughout all or a significant portion of its range.

Erosion Processes

Processes which move earth or rock materials from one place to another, such as landslides and weathering.

Estuary Fringe Habitat

A 1,000-foot zone around an estuary.

Estuary

The relatively flat intertidal and upland areas generally found at the heads of bays and mouths of streams. They are predominantly mud and grass flats and are unforested except for scattered spruce or cottonwood.

Even-Aged Management

The application of a combination of actions that result in the creation of stands in which trees of essentially the same age grow together. Clearcutting is an example of this type of management.

Existing Visual Condition (EVC)

The level of visual quality or condition presently occurring on the ground. The six existing visual condition categories are:

- Type I: Areas which appear to be untouched by human activities.
- Type II: Areas in which changes in the landscape are not noticed by the average person unless pointed out.
- Type III: Areas in which changes in the landscape are noticed by the average person but they do not attract attention. The natural appearance of the landscape still remains dominant.
- Type IV: Areas in which changes in the landscape are easily noticed by the average person and may attract some attention. Although the change in landscape is noticeable, it may resemble a natural disturbance.
- Type V: Areas in which changes in the landscape are obvious to the average person. These changes appear to be major disturbances.
- Type VI: Areas in which changes in the landscape are in glaring contrast to the natural landscape. The changes appear to be drastic disturbances.

Fish Habitat

The aquatic environment and the immediately surrounding terrestrial environment that, combined, afford the necessary physical and biological support systems required by fish species during various life stages.

Floodplain

The lowland and relatively flat areas joining inland and coastal waters, including debris cones and flood-prone areas of offshore islands; including at a minimum that area subject to a 1 percent (100-year recurrence) or greater chance of flooding in any given year.

Fluvial Processes

Processes driven by moving water, such as formation of floodplains, alluvial fans or deltas, and stream channel scour.

Forbs

Any herb that is not a grass or is not grasslike.

Forested Habitat

All areas with forest cover. Used in this EIS to represent a general habitat zone.

Geographic Information System (GIS)

An information processing technology to input, store, manipulate, analyze, and display spatial and attribute data to support the decision making process. It is a system of computer maps with corresponding site-specific information that can be electronically combined to provide reports and maps.

Glacial Processes

Processes related to moving ice or glaciers. These processes include scraping away of soils and substrates, deposition of materials held in the ice (e.g., till or moraines), and formation of kettle lakes where ice chunks broke off, were buried, and later melted.

Habitat Capability

The number of healthy animals that a habitat can sustain.

Healthy Ecosystem

An ecosystem in which structure and functions allow the maintenance of biological diversity, biotic integrity, and ecological processes over time.

Heritage Resources

Historic or prehistoric objects, sites, buildings, structures, and so on that result from past human activities.

Incidental Use Sites

LTF and camp sites where transfer of logs is expected to occur only once or twice over a 60- to 100-year period. Timber volumes at a site will normally not exceed 5 to 10 MMBF. Log sorting areas are normally not constructed and native log structures are expected. Typically the focus is on salvage of logs as a result of blowdown, disease, or harvest of isolated stands of timber. The lands involved are generally not accessible by alternative means. Floating camp operations are the norm.

Indirect Employment

The jobs in service industries that are associated with the Long-Term Contract timber sale, for example suppliers of logging and milling equipment.

Glossary

Interdisciplinary Team (IDT)

A group of people with different backgrounds assembled to solve a problem or perform a task.

Knutsen-Vandenberg Act (KV)

This Act was passed by Congress in 1930 and amended in 1976 to provide for reforestation, resource protection, and improvement projects in timber sale areas. These funds are collected as a portion of the stumpage fee paid by the purchaser. Examples of such projects are stream bank stabilization, fish passage structures, and wildlife habitat improvement.

Land Use Designation (LUD)

The method of classifying land uses presented in the Tongass Land Management Plan (TLMP). Land uses and activities are grouped to define, along with a set of coordinating policies, a compatible combination of management activities. The following is a description of the four classifications:

- LUD I: Wilderness areas.
- LUD II: Lands managed in a roadless state in order to retain their wildland character, but wildlife and fish habitat improvement are permitted, as well as primitive recreation facility and road development under special authorization.
- LUD III: Lands managed for a variety of uses with emphasis on managing for uses and activities in a compatible and complimentary manner to provide the greatest combination of benefits.
- LUD IV: Lands managed to provide opportunities for intensive resource use and development where the emphasis is primarily on commodity or market resources.

Landscape

An area composed of interacting ecosystems that are repeated because of geology, land form, soils, climate, biota and human influences throughout the area. Landscapes are generally of a size, shape and pattern which is determined by interacting ecosystems.

Large Woody Debris (LWD)

Any large piece of relatively stable woody material having a least diameter of greater than 10 centimeters and a length greater than one meter that intrudes into the stream channel.

Layout

Planning and mapping (using aerial photos) of harvest and road systems needed for total harvest of a given area.

Local Road

A forest road that connects terminal facilities with forest collector, forest arterial or public highways. Usually forest local roads are single-purpose transportation facilities and can either be long or short term in nature.

Log Transfer Facility (LTF)

A facility that is used for transferring commercially harvested logs to and from a vessel or log raft or for the formation of a log raft. It is wholly or partially constructed in waters of the United States, and siting and construction are regulated by the 1987 Amendments to the Clean Water Act. Formerly termed terminal transfer facility.

Long-term Road

Roads developed and operated to provide either continuous or intermittent access for long-term land management and resource utilization needs.

Glossary

Management Area

An area one or more VCUs in size for which management direction was written in the Tongass Land Management Plan.

Mitigation

These measures include avoiding an impact by not taking a certain action or part of an action; minimizing an impact by limiting the degree or magnitude of an action and its implementation; rectifying the impact by repairing, rehabilitating, or restoring the affected environment; reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or compensating for the impact by replacing or providing substitute resources or environments.

National Environmental Policy Act (NEPA)

Passed by Congress in 1969, NEPA declared a national policy to encourage productive harmony between humans and their environment to promote efforts that will prevent or eliminate damage to the environment and the biosphere and stimulate the health and welfare of humans to enrich the understanding of the ecological systems and natural resources important to the nation and to establish a Council on Environmental Quality. This act requires the preparation of environmental impact statements for federal actions that are determined to be of major significance.

National Forest Management Act (NFMA)

A law passed in 1976 that amends the Forest and Rangeland Renewable Resources Planning Act and requires the preparation of Forest plans.

Nonforest Land

Lands that have never supported forests, lands formerly forested but now developed for nonforest uses, or lands with less than 10 percent cover of commercial tree species.

Old-Growth Forest

Old-growth stands are characterized by trees well past the age of maturity (dominant trees exceed 300 years in age). Stands exhibit declining growth rates and signs of decadence such as dead and dying trees snags and downed woody material. Stands include trees of all ages, multilayered canopies, a range of tree diameter sizes (including very large diameter trees up to and exceeding 3 meters), and the notable presence of understory vegetation. Old-growth stands are defined in the TLMP inventory as those stands having the majority of timber volume in trees more than 150 years of age.

Overstory

In a stand with several vegetative layers, the overstory is the uppermost layer usually formed by the tallest trees.

Pole/Young Sawtimber Stage

The stage following timber harvest, usually 26 to 150 years, when canopy closure decreases the amount of light that reaches the forest floor and is associated with a rapid reduction in understory biomass.

Potential Yield

The potential yield for the next ten years is the maximum harvest that is possible given the optimum perpetual sustained-yield harvesting level attainable with intensive forestry on regulated areas and considering productivity of the land, conventional logging technology, standard silvicultural treatments, and relationships with other resource uses and the environment.

Glossary

Precommercial Thinning

The practice of removing some of the trees of less than marketable size from a stand in order to achieve various management objectives.

Recreation Places

Identified geographic areas having one or more physical characteristics that are particularly attractive to people engaging in recreation activities. They may be beaches, streamside or roadside areas, trail corridors, or hunting areas of the immediate area surrounding a lake, cabin site, or campground.

Recreation Sites

Specific locations used for recreational activities such as a specific anchorage, campsite or trail. There may be one or more recreation sites within a recreation place.

Resident Fish

Fish that are not anadromous and that reside in fresh water on a permanent basis. Resident fish include non-anadromous Dolly Varden char and cutthroat trout.

Resilience

The ability of an ecosystem to maintain diversity, integrity and ecological processes following disturbance.

Restoration

Actions taken to modify an ecosystem in whole or in part to achieve a desired condition.

Riparian

Areas immediately adjacent to a body of water, the vegetation of which is usually influenced by the water.

Road Management Objective (RMO)

Defines the intended purpose of an individual long-term or short-term road based on Management Area direction and access management objectives. Road management objectives contain design criteria, operation criteria and maintenance criteria.

Road, Short-Term

Road developed and operated for a limited time period but which is likely to be extended during a future entry and which ceases to exist as a transportation facility after the purpose for which they were constructed is completed. These roads are considered part of the Forest transportation network.

Road, Specified

A road and its related transportation facilities and appurtenances shown on the Sale Area Map and listed in the Timber Sale Contract.

Road, Temporary

For National Forest timber sales, temporary roads are constructed to harvest timber on a one-time basis. These logging roads are not considered part of the permanent forest transportation network and have stream crossing structures removed erosion measures put into place, and the road closed to vehicular traffic after harvest is completed.

Second-Growth Forest

Even-aged stands that will grow back on a site after removal of the previous timber stand.

Seedling/Sapling Stage

The stage following timber harvest when most of the colonizing tree and shrub seedlings become established. Usually 1 to 25 years.

Sensitivity Level

The measure of people's concern for the scenic quality of the National Forests. In 1980 the Tongass National Forest assigned sensitivity levels to land areas viewed from boat routes and anchorages plane routes, roads trails, public use areas, and recreation cabins.

- Level 1: All seen areas from primary travel routes, use areas, and water bodies where at least three-fourths of the forest visitors have a major concern for scenic quality .
- Level 2: All seen areas from primary travel routes, use areas, and water bodies where at least one-fourth of the forest visitors have a major concern for scenic quality.
- Level 3: All seen areas from secondary travel routes, use areas, and water bodies where less than one-fourth of the forest visitors have a major concern for scenic quality.

Silviculture

Forest management practices that deal with the establishment, development, reproduction, and care of forest trees.

Slash

Debris left over after a logging operation, i.e. limbs, bark, and broken pieces of logs.

State Historic Preservation Officer (SHPO)

State-appointed official who administers Federal and State programs for cultural resources.

Subsistence Use

The customary and traditional use by rural Alaskan residents of wild renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of nonedible byproducts of fish and wildlife resources taken for personal or family consumption; for barter or sharing; for personal or family consumption; and for customary trade.

Successional Stage

One stage in a series of changes affecting the development of a biotic community. On its path to a climax stage, the community will pass through several stages of adaptation to environmental changes.

Sustainability

The ability of an ecosystem to maintain over time ecological processes and functions, biological diversity, and productivity.

Tectonic Processes

Processes which result in deformation of the earth's crust, such as folding, faulting, mountain building, and movement of blocks of rock. These processes influence the bedrock geology and the gross landforms present in an area.

Glossary

Tentatively Suitable Forest Land

Forest land that is producing or is capable of producing crops of industrial wood and (a) has not been withdrawn by Congress, the Secretary of Agriculture or the Chief of the Forest Service; (b) existing technology and knowledge is available to ensure timber production without irreversible damage to soils productivity or watershed conditions; (c) existing technology and knowledge, as reflected in current research and experience, provides reasonable assurance that it is possible to restock adequately within 5 years after final harvest; and (d) adequate information is available to project responses to timber management activities.

Thousand Board Foot Measure

A method of timber measurement in which the unit is equivalent to 1000 square feet of lumber one inch thick. It can be abbreviated mbf.

Threatened Species

A species of plant or animal which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Timber Appraisal

Establishing the fair market value of timber by taking the selling value minus costs for manufacturing and transporting the logs from the stump to the manufacturer, and including an allowance for profit and risk.

Timber Entry

A term used to refer to how far into the timber rotation an area is on the basis of acreage harvested. For example, if an area is being managed for 3 entries over a 100-year rotation, the first entry would be completed when one-third (approximately 33 percent) of the available acreage is harvested (usually in 30-40 years); the second entry would be completed when two-thirds (approximately 66 percent) of the available acreage is harvested (usually 60-70 years); the third entry would be completed when all of the available acreage is harvested (at the end of the rotation).

Timtype

A source of data contained in the Forest Service Geographic Information System (GIS) database. The forest is mapped into areas/stands/polygons based on vegetation composition, stocking, and productivity characteristics that comprise a GIS data "layer" referred to as "Timtype."

Tongass Land Management Plan (TLMP)

The ten-year land allocation plan for the Tongass National Forest that directs and coordinates planning and the daily uses and activities carried out within the forest. See also Land Use Designation.

Turbidity

A measure of suspended sediments.

Understory

Anything growing in a stratum definitely below the main crown canopy.

Understory-Colonization Stage

The stage following timber harvest when most of the colonizing tree and shrub seedlings become established. Usually 1 to 25 years.

Glossary

Uneven-Aged Management

The application of a combination of actions needed to simultaneously maintain continuous high-forest cover, recurring regeneration of desirable species, and the orderly growth and development of trees through a range of diameter or age classes to provide a sustained yield of forest products. Group and individual tree selection are examples of this type of management.

Value Comparison Unit (VCU)

These areas which generally encompass a drainage basin were established in the Tongass National Forest to provide a common set of areas where resource inventories could be conducted and resource interpretations made.

Visual Quality Level (VQL)

The level of visual quality that would result from the implementation of each alternative, expressed in the same terms as the VQOs, e.g., Retention, Partial Retention, Modification, Maximum Modification.

Visual Quality Objective (VQO)

Measurable standards reflecting five different degrees of landscape alteration based upon a landscape's diversity of natural features and the public's concern for high scenic quality. The five categories of VQOs are:

- Preservation: Permits ecological changes only. Applies to wilderness areas and other special classified areas.
- Retention: Provides for management activities that are not visually evident; requires reduction of contrast through mitigation measures either during or immediately after operation.
- Partial Retention: Management activities remain visually subordinate to the natural landscape. Mitigation measures should be accomplished within one year of project completion.
- Modification: Management activities may visually dominate the characteristics landscape. However activities must borrow from naturally established form line color and texture so that its visual characteristics resemble natural occurrences within the surrounding area when viewed in the middleground distance.
- Maximum Modification: Management activities may dominate the landscape. Mitigation measures should be accomplished with five years of project completion.

Volume

Volume of wood in a stand of timber based on standing net board feet per acre by Scribner Rule.

Volume Class

Volume class strata are used to describe the average volume of timber per acre in thousands of board feet (MBF). Following are the volume class strata and the range of volume each contains.

- Volume Class Strata 3: Less than 8 MBF/acre (cleared land seedlings or pole timber stands).
- Volume Class Strata 4: 8 to 20 MBF/acre.
- Volume Class Strata 5: 20 to 30 MBF/acre.
- Volume Class Strata 6: 30 to 50 MBF/acre.
- Volume Class Strata 7: 50+ MBF/acre.

V-notch

A V-shaped stream channel generally on steep mountainous terrain.

Glossary

Watershed

The drainage area of a stream.

Wetland

Those areas that are inundated by surface or groundwater frequently enough to support vegetation that requires saturated or seasonally saturated soil conditions for growth and reproduction.

Wilderness

An area established by the Federal Government and administered either by the Forest Service, National Park Service Fish, and Wildlife Service or Bureau of Land Management in order to conserve its primeval character and influence for public enjoyment under primitive conditions in perpetuity.

Wildlife Analysis Area (WAA)

Alaska Department of Fish and Game administrative designation of an area that includes one or several Value Comparison Units (VCUs) for the purpose of regulating wildlife populations and reporting harvests.

Wildlife Habitat

The locality where a species may be found and where the essentials for its development and sustained existence are obtained.

Wind Processes

Processes driven by prevailing or storm winds, such as wind snap of tree trunks, blowdown, and deformation of the typical tree crown shape to a flagged form, with most branches growing in the direction of the wind (e.g., krummholz trees at timberline).

Windthrows

Areas where trees are uprooted, blown down, or broken off by storm winds.

Spelling of Tlingit Clan Names in this Environmental Impact Statement

The spelling of Tlingit Clan names in this Environmental Impact Statement is based on two sources. The first is the current standard alphabet devised by Constance Naish and Gillian Story in the 1960s and was revised by Jeff Leer and Nora Marks Florendo Dauenhauer in 1972 with the consent of Ms. Naish and Ms. Story. This is the same alphabet that is used in the Tlingit Verb Dictionary (Story and Naish 1973), the Tlingit Noun Dictionary (Story and Naish 1976), the Tlingit Spelling Book (Dauenhauer and Dauenhauer 1984), and in all school programs in Alaska. This spelling is used in the text of this EIS.

The second source is Alaska Department of Fish and Game, Division of Subsistence technical papers on the harvest and use of fish and wildlife by residents of various Southeast Alaska communities. ADF&G utilized various historical standards for spelling on maps showing historic Tlingit Clan hunting boundaries. These maps are reproduced in the Chapter 3, Subsistence.

The following gives current standard spelling for specific Tlingit clan names and the ADF&G spelling for each map showing historic Tlingit clan hunting boundaries.

	<u>Current Standard</u>	<u>ADF&G</u>
Angoon Clans	Aanx̱aakitaan Deisheetaan Dakl'aweidi Kak'weidl Teikweidi Wooshkeetaan	Anqakitan Decitan Daklawedi Kaukwedi Teokwedi Wuckitan
Hoonah Clans	Chookaneidi Taḵdeintaan Wooshkeetaan	Chukanei Dee' T'akdeintaan Woosh Ki Taan
Sitka Clans	Chookaneidi Kaagwaantaan Kiks.adi L'uknax̱.adi T'aḵdeintaan	Tcukanedi Kagwantan Kiks'adi Luqnaxadi Dak'dentan

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Appendix A

Enhancement Opportunities, Mitigation, and Monitoring

Appendix A

Enhancement Opportunities

Silviculture

Silvicultural enhancement opportunities include both post-harvest hand planting and post-harvest precommercial thinning. In addition there are silvicultural opportunities in previously harvested units. Further field work is needed to identify specific timber stands where post-harvest silviculture treatment is most appropriate. In general, many of these stands are in riparian areas and silviculture treatments would benefit other resources besides timber production including wildlife, fisheries, soils, and watershed.

Silviculture treatments that may benefit wildlife include: mixed grid spacings, thickets, and gaps. These treatments could enhance forage production, hiding cover, and thermal cover requirements for wildlife.

Silviculture treatments in areas adjacent to streams may increase diversity, maintain/enhance wildlife travel corridors, and enhance tree growth to accelerate production of large trees to provide future large woody debris input into the streams.

Silvicultural treatments expected to occur in the Northwest Baranof Project Area after timber harvest activities are completed. These treatments include hand planting, precommercial thinning of proposed harvest units, and surveys of possible precommercial thinning of previously harvested areas.

Hand Planting

Hand planting of yellow-cedar is proposed for units to be harvested using the clearcut with reserves harvest method, where a significant portion of the existing stand is composed of yellow-cedar. This will maintain cedar as a component in the post-harvest stand, and will alleviate concerns over natural regeneration of yellow-cedar following harvest. In addition, planting yellow-cedar will improve structural and horizontal diversity in the post-harvest stand. Table A-1 shows units proposed for hand planting by alternative.

Precommercial Thinning

Precommercial thinning to control stocking and species composition, as well as to improve wildlife habitat, is projected for the units listed below by alternative. These units would be surveyed for precommercial thinning needs between 15 and 20 years after harvest. Projections are based on units with a site index equal to or greater than 80, as these are the most productive sites and would be the highest priority for thinning. Additional units may be thinned, based on benefits to wildlife and/or funding. Table A-2 shows units proposed for precommercial thinning by alternative.

Appendix A

Table A-1 Units Proposed for Hand Planting by Alternative	
Alternative 1	Units
344 Acres	3052, 3063, 3313, 4081, 4083, 4084, 5001, 5002, 6283, 6303, 6333, 7002, 7003, 7004, 7005, 7162, 7163, 7164, 7262, 8061, 9011, 9012, 9021, 9061
Alternative 2	Units
412 Acres	2042, 2043, 3052, 3063, 3305, 3311, 6283, 6303, 6333, 6364, 7002, 7003, 7004, 7005, 7292, 9011, 9012, 9021, 9041, 9061, 9062
Alternative 3	Units
277 Acres	2042, 2043, 3052, 3063, 3305, 3311, 3313, 4081, 4083, 4084, 5001, 5002
Alternative 4	Units
573 Acres	2042, 2043, 3052, 3063, 3305, 3311, 3313, 4081, 4083, 4084, 5001, 5002, 6283, 6303, 6333, 6364, 7002, 7003, 7004, 7005, 7162, 7163, 7164, 7262, 7292, 8061, 9011, 9012, 9021, 9041, 9061, 9062

Table A-2 Units Proposed for Precommercial Thinning by Alternative	
Alternative 1	Units
932 Acres	1221, 1252, 1275, 3051, 3052, 3053, 3054, 3055, 3132, 3313, 3315, 4031, 4041, 4081, 4082, 5005, 5012, 6271, 6272, 6281, 6301, 6331, 6332, 6333, 6334, 7002, 7003, 7005, 7006, 7161, 7163, 7282, 8061, 8062, 8063, 9011, 9012, 9021, 9022, 9023, 9031, 9052, 9061
Alternative 2	Units
1538 Acres	1061, 1065, 1071, 1072, 1145, 1147, 1171, 1172, 1221, 1252, 1275, 3002, 3012, 3014, 3015, 3033, 3051, 3052, 3053, 3054, 3055, 3132, 3141, 3142, 3143, 3201, 3291, 6271, 6272, 6281, 6301, 6331, 6332, 6333, 6334, 6344, 6345, 6361, 6363, 6373, 7002, 7003, 7005, 7006, 7291, 7292, 7293, 9011, 9012, 9021, 9022, 9023, 9031, 9041, 9051, 9052, 9061, 9062
Alternative 3	Units
1061 Acres	1061, 1065, 1071, 1072, 1171, 1172, 1221, 1252, 1275, 3002, 3012, 3014, 3015, 3033, 3051, 3052, 3053, 3054, 3055, 3132, 3141, 3142, 3143, 3201, 3291, 3313, 4031, 4041, 4081, 4082, 5005, 5012, 5013
Alternative 4	Units
1844 Acres	1061, 1065, 1071, 1072, 1145, 1147, 1171, 1172, 1221, 1252, 1275, 3002, 3012, 3014, 3015, 3033, 3051, 3052, 3053, 3054, 3055, 3132, 3141, 3142, 3143, 3201, 3291, 3313, 4031, 4041, 4081, 4082, 5005, 5012, 5013, 6271, 6272, 6281, 6301, 6331, 6332, 6333, 6334, 6344, 6345, 6361, 6363, 6373, 7002, 7003, 7005, 7006, 7161, 7163, 7282, 7291, 7292, 7293, 8061, 8062, 8063, 9011, 9012, 9021, 9022, 9023, 9031, 9041, 9051, 9052, 9061, 9062

Silviculture Treatments in Previously Harvested Areas

Surveys for precommercial thinning needs are scheduled in the Project Area for areas which have previously been harvested. The table below displays planned surveys, by VCU, and calendar year, for previously harvested areas within the Project Area.

Table A-3 Precommercial Thinning Surveys for Previously Harvested Units within the Project Area		
VCU	Total Acres	Calendar Year Survey Scheduled
287	97	1996
289	227	2012
290	48	1996
290	48	2012
291	750	1996
292	996	1996
299	1,244	1996
300	13	1996
301	191	1996

A large portion of the acres displayed above are anticipated to be thinned for wildlife benefits as well as timber production values. Many of these areas are located in areas of high wildlife value and use; mixed grid spacings, thickets, and gaps will be created during thinning operations in these areas, to enhance forage production, hiding cover, and thermal cover requirements for wildlife.

Additional acres located adjacent to many of these previously harvested areas listed above may be considered for riparian thinning projects. Many of these previously harvested areas occur along streams, and harvesting often removed a portion of or all of the large trees located in riparian areas adjacent to the stream. Riparian thinning may be used in some cases to increase species diversity, maintain/enhance wildlife travel corridors, and enhance tree growth to accelerate production of large trees to provide future large woody debris input into the stream system.

Appendix A

Fisheries, Watershed, and Road Management Improvement Opportunities

The following watersheds have had substantial harvest in riparian areas and are the highest priority for enhancement and improvement projects:

- 287 Fish Bay (lower part)
- 291 Duffield Creek
- 292 Rodman Creek and Adams Creek
- 299 Nakwasina River
- 300 Noxon Creek
- 301 Lisa Creek

Inventory work has been done for parts of some of these systems (Rodman Creek, Adams Creek, Fish Creek and Noxon Creek), however there has been no comprehensive inventory and assessment done. Additional watershed improvement needs inventory will be needed to identify site specific opportunities, establish priorities, and develop funding requirements.

In general fisheries and watershed rehabilitation work includes:

- Installing large woody debris structures,
- Riparian thinning in second-growth stands along Class I and II streams ,
- Borrow pond excavation for coho rearing habitat , and
- Road Maintenance, including: drainage structure maintenance or removal on old roads near Class I and II streams, reconstruction of existing roads away from stream channels, armoring on fill/cut slopes where runoff enters streams, replacement of culverts that are too small, and replacement of culverts which block fish access to Class I and II stream habitat.

One specific fisheries enhancement opportunity has been identified for all alternatives. The opportunity exists in Adams Creek to tie existing borrow ponds (created from past road building) to the stream channel to create rearing habitat for coho salmon fry.

Recreation

Roads could be converted to trails after logging is completed. Maintenance Level I roads (see Appendix D - Road Management Objectives, for information on road maintenance proposed in each alternative) could be brushed and used as trails.

Mitigation Measures

The application of mitigation measures begins during the planning phases of a project. We have applied standards, guidelines, and direction contained in the current TLMP, the Alaska Regional Guide, and applicable Forest Service manuals and handbooks in the development of alternatives and the design of harvest units and roads.

The Forest Service will identify mitigation measures adopted to reduce or eliminate adverse effects at the time the Record of Decision (ROD) is signed. We used issues identified during scoping to define the resource areas where mitigation was needed. A brief summary of mitigation measures common to all alternatives follows. Specific mitigation measures, as applied to each individual unit, are shown in the unit design cards. These unit cards are an important tool for implementing the project as they list design considerations and provide a mechanism for tracking the project implementation. Unit Cards are included in Appendix U.

Water Quality and Production

Measures which protect water quality and fish habitat include application of the Best Management Practices (BMPs) stated in the Soil and Water Conservation Handbook (USDA FSH 2509.22). This handbook provides standard operating procedures for all stream classes. In addition, the TTRA mandates a minimum 100-foot buffer on all Class I streams and on Class II streams that flow directly into Class I streams. The 100-foot stream buffer width mandated by TTRA is a minimum. The width of this buffer strip may be greater than 100 feet for reasons such as topography, riparian soils, a windfirm boundary, timber stand boundaries, logging systems requirements, and varying stream channel locations. Refer to Appendix U (Unit Design Cards) for the unit-specific stream buffering which is being applied.

Application of BMPs and adherence to the law will protect water quality and fish habitat as well as riparian habitat important to other species such as brown bear and furbearers.

Wildlife

We reduce effects on wildlife by intentionally harvesting units away from important wildlife habitats (to the extent practicable). We avoid beach and estuary fringe habitats as much as possible, and leave travel corridors (where practicable) to allow undisturbed movement of wildlife. In addition, we plan to mitigate impacts to wildlife by closing roads, retaining snags where safe to do so, and scheduling harvest activities to reduce disturbance to bald eagle nesting and rearing activities. We will mitigate impacts to the brown bear from bear-people interactions by informing logging camp residents about brown bear behavior and bear management policies. Incinerators will be used in logging camps for garbage disposal to prevent bear-garbage problems.

Appendix A

Recommended mitigation for other wildlife species are:

- For mountain goats during kidding season (May 15 to June 15), no helicopter yarding if goats have been seen within 1,500 feet of harvest unit.
- For active marbled murrelet nest, protect 30 acres undisturbed habitat around nest site until nestling fledges.
- For occupied great blue heron nest site, protect with a 1/4 mile undisturbed habitat from March 1 to July 31.
- For active northern goshawk nest site, follow standards and guidelines, protect with 30-acre undisturbed habitat and have seasonal restrictions.
- For other active raptor nest site, protect nest stand during nesting season.
- For trumpeter swan, no activity within 1/2 mile of feeding and resting areas from November 1 to April 1.

Subsistence

Because most subsistence use involves harvesting fish and game, mitigation measures that protect or enhance fish and game resources will also protect and enhance subsistence activities. By placing units and roads away from beach and estuary fringe habitats and away from salmon-bearing streams, mitigation measures were built into each of the alternatives considered in this EIS. Also, road management can affect access and thus be used to maintain traditional access methods and uses.

Recreation and Scenic Quality

We will reduce effects of timber harvest on views from the ferry route, anchorages, and known recreational day-use areas by leaving buffers of timber along beaches and inland lakes. Roads and rock borrow pits will be located to minimize visibility, where practicable, in scenic viewsheds. Because many recreation activities which take place in the project area are related to the consumptive use of fish and wildlife. Mitigation measures that protect fish and game resources will also protect private and commercial recreation. Scheduling of timber offerings will be done so that all areas are not impacted or all LTFs active at the same time. In areas where RMDs allow off road vehicle use, LTFs will be designed to facilitate post harvest loading and unloading of ORVs from skiffs.

Monitoring

Implementation Monitoring

Timber Unit Layout

Objective:	To minimize the effects of timber harvest on other natural resources.
Desired result:	Unit card design specifications allow timber harvest to “lay lightly” on the land.
Measurement:	Sale layout employees will follow guidance on the cards. Other resource specialists will assist in unit layouts as indicated on the unit cards. At least 20 percent of the units implemented each year will be sampled for compliance with unit card design (BMPs 13.3, 13.8).
Threshold:	Unit sample should be within 10 percent of the parameters stated on the unit card.
Corrective action:	If needed, determine why unit was not laid out as designed. Document changes if they benefit the environment; change unit layout to match the design if effects are within BMPs.
Responsible staff:	Sitka Ranger District (SRD) sale layout employees.
Record of results:	As-laid-out unit cards.
Annual cost:	Ongoing work; no additional funding needed.
Personnel needs:	None.

Timber Unit Yarding

Objective:	To ensure yarding minimizes the potential risk of soil loss in units with high-hazard soils.
Desired result:	Use of log suspension and yarding away from V-notches to protect high-hazard soils from erosion.
Measurement:	Sale administrator will ensure log suspension occurs in designated units. Specialists may spot check up to 20 percent of the units with high hazard soils for compliance with BMPs (BMPs 13.2, 13.4, 13.5, 13.9, 13.12, and 13.15).
Threshold:	Exposure of more than 10 percent of the affected area to bare mineral soil.
Corrective action:	Stop implementation and resolve among sale administrator, soil scientist, and timber sale operator. If not resolvable at the field level, bring to District Ranger.
Responsible staff:	Soil Scientist and SRD sale administration employees.
Record of results:	Daily diaries of engineering representatives and sale administrators, and memos of soil scientist documenting field verification activities.
Annual cost:	Ongoing work; no additional funding needed.
Personnel needs:	None.

Road Location and Design

Objective:	To ensure that roads are located as specified in the EIS.
Desired result:	Road survey and design standards capture the stated intent of the EIS, which is to minimize impacts to soil and water resources (BMPs 14.2, 14.5, 14.6, 14.10, 14.12, and 14.4). Post sale road management is implemented as specified in the EIS.
Measurement:	Engineering representatives and road designers will review roads during contract preparation, field design staking, and at the close of the timber sale. Final plan-in-hand review will ensure compliance with RMOs.
Threshold:	Less than 10 percent variation between plans and field location. No variation from specified road management.
Corrective action:	Correct designs as needed in the pre-implementation stages. During plan-in-hand review, implement changes specified in design if not in compliance. Implement specified road management.
Responsible staff:	Engineering staff, and District Ranger for final approval.
Record of results:	Road survey and designs, and memos noting plan-in-hand review.
Annual cost:	Ongoing work; no additional funding needed.
Personnel needs:	None.

Appendix A

Slope Stabilization

Objective:	To determine if road designs and construction have met the intent of the EIS to reduce risk, of mass failure.
Desired result:	Design roads that minimize the potential for road-related mass failures during and after timber harvest (BMPs 14.7, 14.8, 14.12, and 14.20).
Measurement:	Engineering representatives and road designers will review roads during contract operations, assisted by the soil scientist or geotechnical engineer as needed. Final plan-in-hand review will ensure compliance with road design standards. The survey of timber unit areas and roads five years following close of operations will be scheduled by soil scientist or geotechnical engineer.
Threshold:	Less than 10 percent variation between plans and implementation.
Corrective action:	Correct designs as needed in the pre-implementation stages. During plan-in-hand review, contractor implements changes specified in the design if not in compliance.
Responsible staff:	District Ranger for final approval.
Record of results:	Road survey and designs, and memo noting plan-in-hand review or findings of soil scientist.
Annual cost:	\$4,000.
Personnel needs:	0.2 FTE, a geotechnical engineer as needed.

Erosion Control Measures

Objective:	To minimize erosion and sedimentation in timber harvest and road construction and maintenance activities.
Desired result:	Road survey and design standards capture the stated intent of the EIS, which is to minimize the risk of soil erosion and sedimentation to streams (BMPs 13.13, 13.16, 13.17, 14.5, 14.11, 14.16, 14.17, 14.18, 14.20, 14.22, and 14.26).
Measurement:	Engineering representatives and road designers will review roads during and following contract operations, assisted by soil scientist as needed. Periodic survey following close of operations will be scheduled by the soil scientist.
Threshold:	Erosion control methods in place 90 percent of the time.
Corrective action:	Correct designs as needed in the pre-implementation stages. During sale operations, contractor will implement changes specified by design guidelines if not in compliance.
Responsible staff:	Engineering staff and soils staff (post-harvest).
Record of results:	Daily diaries of engineering representative; following sale operations, results recorded by soil scientist in follow-up reviews.
Annual cost:	\$3,000.
Personnel needs:	0.1 FTE.

LTFs Spill Control Measures

Objective:	To ensure that petroleum spills do not affect marine waters.
Desired result:	LTF design and implementation will prevent fuel spillage from entering nearby waters.
Measurement:	Routine observation by LTF operator for oil sheen as required by EPA 402 permit (BMPs 12.8, 12.16, and 14.4).
Threshold:	Evidence of oil sheen on surface of water.
Corrective action:	Suspend operations and remedy the situation.
Responsible staff:	Sale administrator and field engineer.
Record of results:	Daily diaries of field inspectors.
Annual cost:	Ongoing work; no additional funding needed.
Personnel needs:	None.

LTF Removal

Objective:	To minimize permanent effects of LTFs on the marine environment.
Desired result:	Apply mitigation measures by removing temporary LTF structures at completion of contract operations. (BMP 14.5 and 14.5. Other measures may be stipulated in LTF permits following Record of Decision.)
Measurement:	Enforcement of contract specifications at completion of operations.
Threshold:	Removal of LTF is incomplete.
Corrective action:	Withhold release of performance bond until mitigations are in compliance with contract specifications.
Responsible staff:	Sale administrator and engineering representative.
Record of results:	Letter authorizing movement of sale operations.
Annual cost:	Ongoing work; no additional funding needed.
Personnel needs:	None.

Stream Buffers for the Tongass Timber Reform Act

Objective:	To ensure compliance with the TTRA.
Desired result:	Ensure that minimum 100-foot buffers are maintained to protect water quality and stream habitat for all Class I and Class II streams that flow directly into Class I streams near timber harvest units (BMPs 12.6, 12.7, and 13.15), and per Regional Forester's November 21, 1995 letter, stream buffer and classification.
Measurement:	Spot-check 20 percent of all units near anadromous fish streams for compliance with TTRA. Field verification prior to timber harvest.
Threshold:	Minimum 100-foot buffer.
Corrective action:	Postpone implementation until minimum buffer widths are verified.
Responsible staff:	Fisheries Specialist and SRD timber layout and sale administration employees.
Record of results:	Sale layout cards for units and daily diaries of sale administrators.
Annual cost:	Ongoing work; no additional funding needed.
Personnel needs:	None.

Stream Buffers for Streams Not Covered by the TTRA

Objective:	To ensure protection of water quality streams.
Desired result:	For all Class II and Class III streams, manage according to the AHMU handbook (FSH 2609.22) (BMPs 12.6, 12.7, and 13.15), and per Regional Forester's November 21, 1995 letter, stream buffer and classification.
Measurement:	Specialists will spot-check up to 20 percent of the units offered for sale each year. Where units cross these types of channels, log suspension is required in the timber sale classes and yarding occurs away from the V-notches to minimize soil disturbance.
Threshold:	Boundaries along Class II and Class III streams will stop where planned in 90 percent or more of the units checked.
Corrective action:	Stop implementation and resolve among sale administrator, timber sale operator, and timber layout employees. If not resolvable at the field level, bring to District Ranger
Responsible staff:	Hydrology specialist and SRD timber layout and sale administration employees.
Record of results:	As-laid-out cards for units prepared by layout employees, or daily diaries of engineering representatives and sale administrators.
Annual cost:	Ongoing work; no additional funding needed.
Personnel needs:	None.

Appendix A

Eagle Nesting Habitat

Objective:	To ensure Forest Service maintains minimum 330-foot buffers around eagle nest locations or minimizes impacts on nest locations with approved variances.
Desired result:	Protect eagle nest locations.
Measurement:	During sale implementation activities, observe eagle activities in nests close to logging camps and major road crossings, especially where variances to 330-foot minimum buffers were negotiated.
Threshold:	Management activities encroach on 330-foot minimum buffers or on trees with approved variances, causing eagle nesting to cease.
Corrective action:	If it appears eagle nesting is disrupted because of management activities, consult with the U. S. Fish and Wildlife Service (USFWS) to resolve potential problem.
Responsible staff:	Sale administrator and wildlife specialist.
Record of results:	Daily diaries of sales administrators, and memos of wildlife specialists recording findings at nest sites.
Annual cost:	Ongoing activity for sale administration. Site visits by wildlife specialists would cost an estimated \$4,000 per year during active logging operations.
Personnel needs:	None.

Beach Fringe, Estuary Fringe, and Riparian Habitat

Objective:	Avoid extending harvest units into beach or estuary fringe habitat. Ensure that travel corridors are protected.
Desired result:	Avoid loss of wildlife habitat or other effects beyond the parameters of the preferred alternative.
Measurement:	Unit cards identify unit locations, noting if they are adjacent to protected travel corridors, estuaries, or beach fringes. If so noted, the units must not be enlarged in a manner that adversely affects these wildlife features. Twenty percent of units laid out each year will be spot-checked for conformance with unit card design guides.
Threshold:	More than 10 percent of the spot-checked units deviate from wildlife concerns stated on cards.
Corrective action:	If landing or boundary locations are not feasible, the layout employee will contract a wildlife specialist and resolve desired changes at the time of layout. If still unresolved, bring to the District Ranger.
Responsible staff:	SRD timber layout and sale administration employees.
Record of results:	As-laid-out unit cards, as part of the pre-sale files.
Annual cost:	Ongoing work; no additional funding needed.
Personnel needs:	None.

Cultural Resources

Objective:	To ensure cultural resources are protected.
Desired result:	Resolve conflicts between goal of protective cultural resources and need for timber harvest, road construction, and log transfer facility construction to conform to the National Historic Preservation Act as amended. Confirm that cultural resources are protected before operations begin.
Measurement:	Evaluate impacts on cultural resources discovered after the start of timber harvest, road building, or LTF construction.
Threshold:	Evidence of cultural materials discovered during operations.
Corrective action:	Cultural resources specialist will ensure known sites are protected prior to implementing any land-disturbing activities. In the event of future discoveries, suspend activities until mitigation and protection measures are designated jointly by cultural resources staff, State Historic Preservation Officer, the Advisory Council on Historic Preservation, and District Ranger.
Responsible staff:	Sale layout employees, engineering and road design employees, and field inspectors of timber sale operations. Cultural resource specialist is available for field inspection as needed.
Record of results:	New discoveries will be recorded in daily diaries of field inspectors. Cultural resource specialist will develop and maintain appropriate records for new discoveries brought to his or her attention.
Annual cost:	Ongoing work; no additional funding needed.
Personnel needs:	None.

Effectiveness Monitoring

Timber Restocking

Objective:	To ensure restocking occurs within minimum time frames stated in the NFMA.
Desired result:	Adequately restocked timber stands.
Measurement:	Stocking surveys at the first, third, or fourth year.
Evaluation:	Determination that stocking is adequate. Corrective action (i.e., planting) if natural regeneration is inadequate.
Responsible staff:	SRD staff.
Record of results:	Annual restocking report (NFMA).
Annual cost:	Ongoing business; no additional funding needed.
FTE needs:	None.

Site Utilization

Objective:	To ensure timber growth on high productive sites is managed future fiber production.
Desired result:	On high site index sites, thin stands aged 15 to 20 years.
Measurement:	Conduct surveys of stands aged 10 to 12 years to identify and plan future thinning activities.
Evaluation:	Assess and document survey findings. Prioritize and program the best stands for thinning when they are 15 to 20 years old.
Responsible staff:	SRD employees.
Record of results:	Annual report of overall thinning and precommercial thinning (Supervisor's Office).
Annual cost:	Ongoing business; no additional funding needed.
FTE needs:	None.

Post-Sale Road Use

Objective:	To determine if RMOs for post-sale use are reflected by actual use.
Desired result:	Use of road systems after harvesting conforms to guidelines. Effects of road use on resources do not exceed stands.
Measurement:	Random visits to beach heads from May to November.
Evaluation:	Determine if use is occurring, if RMOs are being met, and if vehicles are honoring road closures.
Responsible staff:	SRD timber staff, with assistance from recreation specialist as needed.
Record of results:	Memo documenting findings of random visits (completed after each visit).
Annual cost:	\$2,500.
FTE needs:	0.1 FTE.

Water Quality and Water Uses

Objective:	To ensure that management activities maintain water quality and protect beneficial water uses, particularly fish habitat.
Desired result:	To determine how well BMPs that are properly implemented protect water quality and water uses.
Measurements:	Field monitoring of road drainage structure and erosion, BMP effectiveness, LTFs, stream buffer strips for stability and effectiveness, Class III stream protection and yarding disturbance, and landslides as per annual Chatham Area BMP effectiveness monitoring.
Evaluation:	Assess and document survey findings. Determine mitigating actions if necessary or practical.
Responsible staff:	SO and District staffs.
Record of results:	Annual reports to appropriate regulating organization (ADEC/EPA, AWGCFRR).
Annual cost:	LTF, \$2,000; road drainage, \$3,000; buffer strip stabilization, \$500; Class III stream and yarding, \$1,000; BMP effectiveness, \$1,500; landslide, \$1,000; buffer strip effectiveness will be done outside Project Area.
FTE needs:	LTF, 0.1 FTE; road drainage, 0.1 FTE; buffer strip stabilization, 0.1 FTE; Class III stream and yarding, 0.1 FTE; BMP effectiveness, 0.1 FTE; landslide, 0.1 FTE.

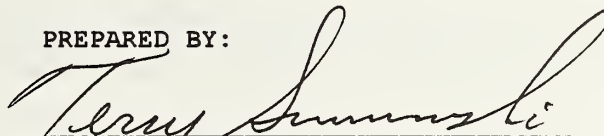
Appendix B

Biological Assessment & Biological Evaluation

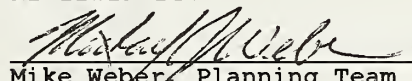
Biological Assessment and Biological Evaluation
For
Endangered, Threatened, Species of Concern,
and Sensitive Vertebrate Species
Which May Occur in the Northwest Baranof Timber Sale Area

November 11, 1995

PREPARED BY:


Terry Suminski, Biologist
Sitka Ranger District

REVIEWED BY:


Mike Weber, Planning Team Leader/ Wildlife Biologist
Chatham Area

INTRODUCTION

This Biological Assessment (BA)/ Biological Evaluation (BE) was prepared to fulfill requirements of the Endangered Species Act of 1973, as amended and Forest Service endangered threatened, and sensitive animal species policy (FSM 2670). The purpose of a BE is to analyze the possible effects of the proposed action on endangered, threatened, species of concern, and sensitive animal species.

PROJECT DESCRIPTION

PROJECT OVERVIEW

The Tongass National Forest, Sitka Ranger District, proposes to harvest up to 66.9 MMBF of timber from up to 3,262 acres of the Northwest Baranof Project Area. Up to seven Log Transfer Facilities (LTF) and up to 62 miles of road would be constructed or reconstructed to allow removal of the timber.

PROJECT LOCATION

The Northwest Baranof Project Area is located in the Tongass National Forest at the Northwest end of Baranof Island, approximately 5 air miles north of Sitka (Figure 1). The Project Area encompasses approximately 156,000 acres.

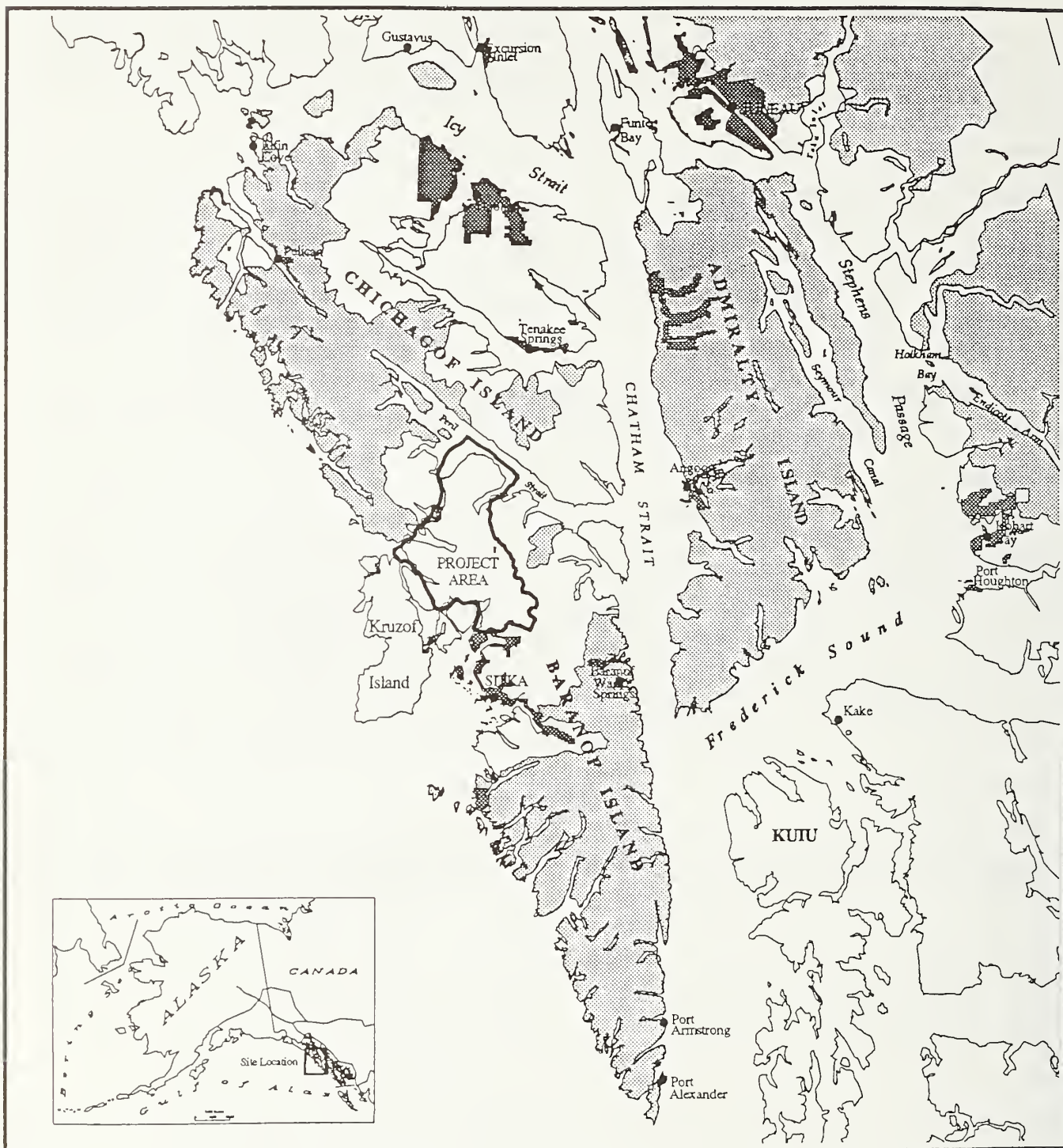
ALTERNATIVES




A total of five alternatives, including the No Action Alternative, were developed and evaluated. The action alternatives were each developed to be as site-specific possible. Collectively, the action alternatives were formulated to explore ways to satisfy public concerns and resolve issues of concern, while responding to the purpose and need for the project.

The four action alternatives differ primarily in harvest intensity (i.e., number of harvest units), miles of road, and number of LTFs. The silvicultural systems (i.e., clearcut vs. group selection) and yarding technique (i.e. helicopter vs. cable system) are unit specific and do not vary between alternatives. The following table summarizes the features of each alternative.

Alternative Summary												
	Alt. 1			Alt. 2			Alt. 3			Alt. 4		
Sawlog Volume (mmbf)	35.5			51.9			38.8			66.9		
Proposed Harvest Acres	1,725			2,505			1,889			3,263		
Number of Units	96			107			71			153		
Proposed Harvest by Harvest System												
	Alt. 1			Alt. 2			Alt. 3			Alt. 4		
Skyline Acres	885	51%		862	34%		590	31%		1,196	37%	
Helicopter Acres	840	49%		1,643	66%		1299	69%		2,067	63%	
Helicopter Volume (mmbf)	15.1			32.2			24.8			39.5		
Proposed Harvest Acres by Silvicultural Prescription												
	Alt. 1			Alt. 2			Alt. 3			Alt. 4		
Clearcut w/Reserves	810	47%		1,002	40%		775	41%		1,338	41%	
Seed Tree Cut	347	20%		626	25%		604	32%		816	25%	
Overstory Removal	325	19%		576	23%		208	11%		652	20%	
Group Selection	243	14%		301	12%		302	16%		457	14%	
Proposed Harvest Volume (Sawlog) by Silvicultural Prescription (in mmbf)												
	Alt. 1			Alt. 2			Alt. 3			Alt. 4		
Clearcut w/Reserves	19.7			23.6			18.6			32.5		
Seed Tree Cut	7.9			15.2			14.0			18.9		
Overstory Removal	6.6			11.4			4.4			12.8		
Group Selection	1.3			1.7			1.8			2.6		
Proposed Roads and Log Transfer Facilities (LTFs), and Helicopter Insertion Log Transfer Sites (HILTS)												
	Alt. 1			Alt. 2			Alt. 3			Alt. 4		
New Road Miles	18.5			18.5			8.9			30.4		
Reconstruction Miles	11.9			13.1			9.0			16.5		
Temporary Road Miles	12.2			8.2			6.5			14.4		
No. of LTFs	6			4			3			7		
No. of HILTS	1			1			1			2		

Vicinity Map



-  Project Boundary
-  Land Allocated to Wilderness or Roadless Management
-  Land Ownership or Selection other than National Forest

8 4 0 8 16

 Scale in Miles



WILDLIFE SPECIES

After consulting (Appendix A) with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, and the Alaska Region Sensitive Species list (FSM 2670), the following table was generated. This table describes the endangered, threatened, species of concern, and sensitive species which may occur in the Project Area.

Threatened, Endangered, Species of Concern and Sensitive Species Which May Occur in the Northwest Baranof Project Area			
Common Name	Scientific Name	Federal Status	Alaska Region Status
Humpback whale	<u>Megaptera novaengliae</u>	E	--
Steller sea lion	<u>Eumetopias jubatus</u>	T	--
American peregrine falcon	<u>Falco peregrinus anatum</u>	E	--
Marbled murrelet	<u>Brachyramphus marmoratus</u>	C	--
Harlequin duck	<u>Histrionicus histrionicus</u>	C	--
Northern goshawk	<u>Accipiter gentilis</u>	C	S
Olive-sided flycatcher	<u>Contopus borealis</u>	C	--
Osprey	<u>Pandion haliaetus</u>	--	S
Trumpeter swan	<u>Cygnus buccinator</u>	--	S
Peale's peregrine falcon	<u>Falco peregrinus pealei</u>	--	S

E = Endangered. Species is in danger of extinction throughout all or a significant portion of its range.

T = Threatened. Species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

C = Species of Concern (former Category 2 Candidate species). Species for which there is some evidence of vulnerability, but for which there are not enough data to support a listing proposal at this time.

S = Sensitive species. Species that is considered sensitive due to its behavior or critical life cycle component that may be affected or is considered sensitive through its association with a habitat type that is particularly sensitive.

HUMPBACK WHALE

Distribution and Populations

The humpback whale is an endangered species. It occurs in all oceans of the world. In winter, most humpback whales occur in temperate and tropical waters of both hemispheres. In summer, most humpback whales are in waters of high biological productivity, usually in the higher latitudes.

The humpback whale is the most abundant of the eight endangered species of whales that occur in Southeast Alaskan waters. Humpback whales are regularly sighted in the Inside Passage and coastal waters from Yakutat Bay south to Queen Charlotte Sound (NMFS 1991). They feed in Southeast Alaska from about May through December, although some have been seen every month of the year (Baker et al. 1985). Peak numbers of humpback whales are usually found in nearshore waters during late August and September, but substantial numbers usually remain until early winter. An estimated 300 to 350 humpback whales inhabit Southeast Alaska waters during the summer and fall (Baker et al. 1985).

The local distribution of humpback whales in Southeast Alaska appears to be correlated with the density and seasonal availability of prey, particularly herring and krill (Bryant et al. 1981, Baker et al. 1985). Important feeding areas in Southeast Alaska include Glacier Bay, Icy Strait, Stephens Passage, Frederick Sound, Seymour Canal, and Sitka Sound (Baker et al. 1985, Straley 1990).

Determination of Effects

The proposed activities that potentially could result in impacts to humpback whales are the use of camps, LTFs, and the movement of log rafts and barges.

Operation of LTFs and other docking facilities are restricted to small, very localized areas of the marine environment. Operation of LTFs is unlikely to affect prey availability for humpback whales. The permitting process for LTFs requires that monitoring be conducted to maintain water quality and marine circulation and flushing during construction and operation of LTFs. As a result of the permitting requirements, no impacts are anticipated to the marine environment which could affect humpback whale prey species.

Humpback whales could be disturbed by increased boat traffic associated with LTFs. Log barge towing occurs at relatively constant speeds and directions, and is less likely to elicit avoidance behavior from whales than other types of boating activity. Recreational boating by LTF workers involves frequent changes in speed and direction. Disturbance impacts would be localized and highly random, depending on many factors, such as the size of the bay, water depth, number of boats, and individual behavioral responses of humpback whales. Behavioral responses could include sounding, breaching, evasive underwater maneuvers, and maintaining distance. The likelihood of a boat collision with a humpback whale is remote and predicting such a random event would be difficult.

Cumulative effects

There will be no cumulative effects.

Findings

There will be no effect to species and habitat.

AMERICAN PEREGRINE FALCON

Distribution and Populations

The American peregrine falcon is an endangered species. It nests in interior Alaska and occurs in Southeast Alaska on a short term basis during spring and fall migration. During migration, peregrine falcons forage in areas of high prey availability, such as seabird rookeries and waterfowl concentration areas (Armstrong 1990).

Determination of Effects

There are no seabird rookeries in the Project Area, but waterfowl may concentrate in estuaries within the Project Area. The American peregrine falcon would not be affected as a result of the proposed project since habitats used during migration (estuaries with concentrated waterfowl) would not be effected by the project.

Cumulative Effects

There will be no cumulative effects.

Findings

There will be no effect to species or it's habitat.

STELLER SEA LION

Distribution and Populations

The Steller sea lion is a threatened species. The range of the Steller sea lion extends along the rim of the North Pacific Ocean from eastern Asia, along the coast of Alaska, and south to California. The centers of abundance and distribution are the Gulf of Alaska and Aleutian Islands. Population levels have declined in portions of Alaska, but are fairly stable in Southeast Alaska (NMFS 1992).

Steller sea lion habitat includes marine and terrestrial areas that are used for a variety of purposes. Adult Steller sea lions congregate at rookeries for pupping and breeding. Rookeries generally are located on relatively remote islands, often in exposed areas where access by humans and mammalian predators is difficult. No haulouts or rookeries are located in the Project Area (Zimmerman 1991), but they may feed in the vicinity. Steller sea lions eat a variety of fish and invertebrates. Potential prey items in marine waters of the Project Area include Pacific cod, Pacific herring, and salmon.

Determination of Effects

Disruption of Steller sea lion activities at haulouts or rookeries would not occur since these habitats do not exist in the Project Area.

LTF operation is unlikely to affect prey availability for Steller sea lions, since the permitting process for LTFs requires that monitoring be conducted to maintain water quality and marine circulation and flushing during construction and operation of LTFs.

Disruption of feeding activities may occur due to increased boating, recreation, aircraft, LTFs, and log barge towing in the area, but the frequency and effect of these interactions would be difficult to predict and is not expected to be significant. These activities may occasionally effect individuals but would not result in a negative effect on the species.

Cumulative Effects

There will be no cumulative effects.

Findings

There will be no effect to species or it's habitat.

HARLEQUIN DUCK

Distribution and Populations

The harlequin duck is a species of concern. The harlequin duck is a fairly common year-round resident in Southeast Alaska (Armstrong 1990). Harlequin ducks winter in coastal waters and nest along inland streams. Nests are well hidden and often difficult to locate. Nests have been found under root overhangs in creek banks, on cliff ledges above streams, on logjams, and in tree cavities (Cassirer and Groves 1991).

During winter, harlequin ducks are common to abundant in coastal waters of Southeast Alaska (Armstrong 1990). They winter close to reefs, rocky islands and cobble beaches, usually in small groups but occasionally in rafts of several hundred or more.

Determination of Effects

Harlequin duck habitat is present in the Project Area. No surveys were conducted as timber harvesting activities would not occur within 100 feet of any stream which contains fish habitat. These streams represent the vast majority of potential harlequin duck habitat and therefore would not be affected.

Road crossings at streams may displace individuals but the population would not be affected.

Wintering habitat, which is found in coastal waters, also would not be affected as no proposed activities would occur in such wintering habitat areas.

Cumulative effects

There has been a loss of habitat due to past timber harvest which took place along streams of the Project Area. The proposed action would add slightly to this impact at stream road crossings. There are no timber sales planned after the proposed action.

Findings

The project may impact individuals, but is not likely to result in a trend toward federal listing or loss of viability.

MARbled MURRELET

Distribution and Populations

The marbled murrelet is currently listed as a Species of Concern. It occurs along the Pacific Coast of North America and Asia from south-central California to the Barren and Aleutian Islands in Alaska, and from the Sea of Okhotsk, Kamchatka, and the Commander Islands, south to Korea, Japan and the Kurile Islands (Marshall 1988).

In Alaska, marbled murrelets are found along the coast from Southeast Alaska to the western Aleutian Islands. The highest numbers occur in Southeast Alaska where the population during the breeding season is estimated to be 96,000 marbled murrelets (Piatt and Ford 1993). This population comprises approximately 63 percent of the total estimated number of marbled murrelets in the entire state of Alaska.

Marbled murrelets forage year round in nearshore marine waters, congregating in

well-defined areas where food is abundant. Marbled murrelets nest in old-growth forest habitat. Suitable nest trees have large branches, deformities, or other structures that provide a platform for a nest. Nests are generally located high above ground with good overhead protection. Most nests have been found in larger forest stands with sufficient interior forest habitat; these habitat conditions minimize the risk of predation at the nest and provide suitable climatic conditions for nesting (U.S. Fish and Wildlife Service 1994a).

Marbled murrelets nest in old-growth forest habitat in the Project Area. All old-growth forest in the Project Area is adjacent to the marine environment where marbled murrelets occur, and therefore, is assumed to provide suitable nesting habitat for marbled murrelets.

No nesting activity has been documented in this area (Mendenhall 1992) and no nesting surveys have been conducted in the Project Area. However, nearshore marine surveys and dawn watches were conducted in the Project Area by Forest Service Biologists.

Nearshore marine surveys were conducted in May of 1993 along the entire coast of the Project Area (approx. 130km). 284 marbled murrelets were counted (Appendix B).

Two dawn watches were conducted in 1993, 6 dawn watches occurred in 1994 and 6 in 1995 (Appendix B).

Determination of Effects

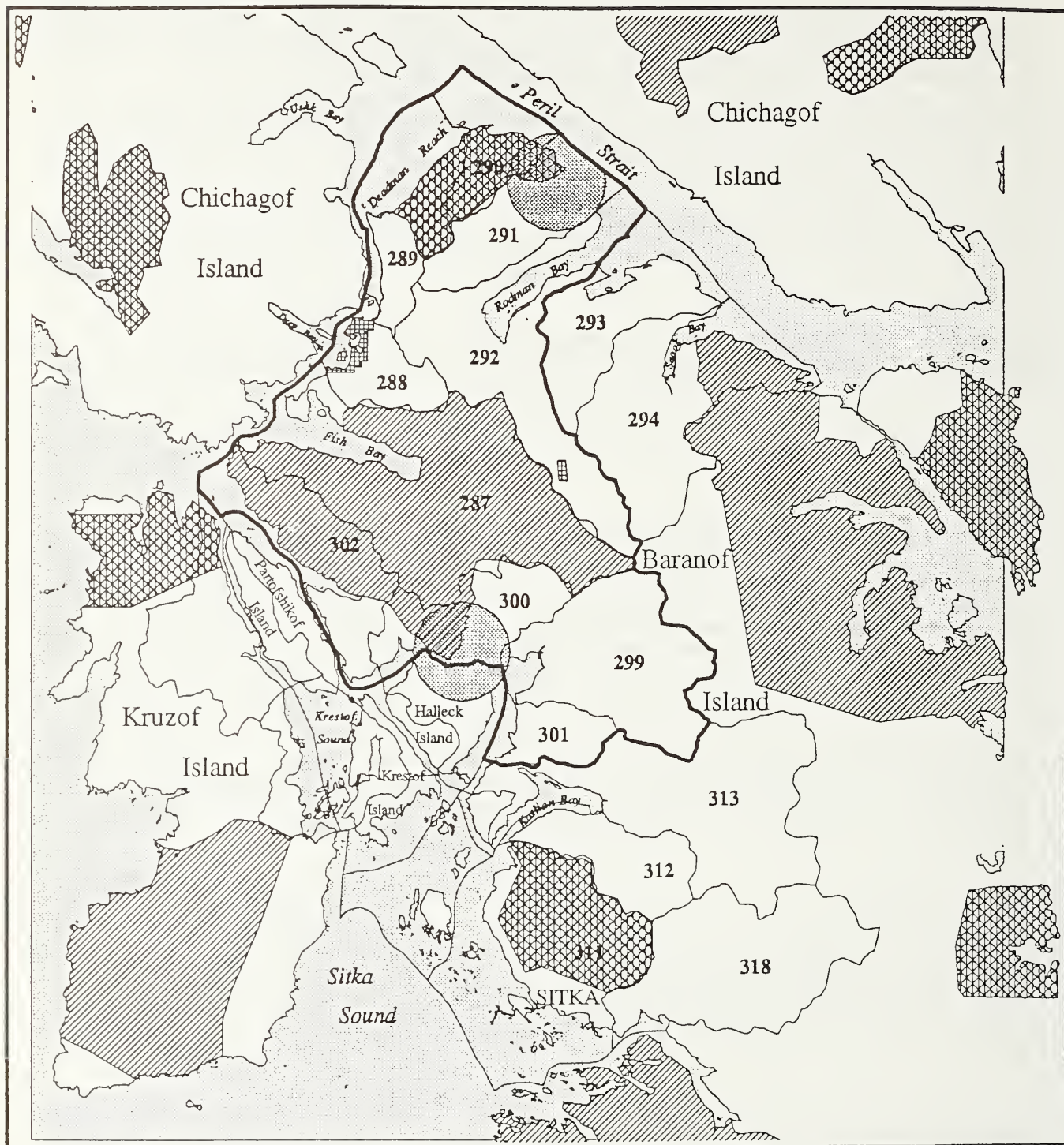
Harvesting of old-growth timber in the Project Area is likely to result in loss of nesting habitat for marbled murrelets. Available evidence from Southeast Alaska suggests that marbled murrelets are dependent on old-growth forests for nesting habitat (Quinlan and Hughes 1990). Evidence from California, Oregon and Washington suggests that declines in murrelet populations may be related to the loss of mature and old-growth forest habitat (Carter and Morrison 1992).



All action alternatives would harvest stands which may be capable of providing nesting habitat for marbled murrelets. The amount of old-growth currently being used by marbled murrelets is unknown. The factors currently limiting marbled murrelets in Southeast Alaska have not been identified. Assuming that availability of nesting habitat is a limiting factor for the population, then a reduction in available nesting habitat could result in a reduction of the population. However, this relationship has not been quantified in Southeast Alaska (DeGange, personal communication 1995).

Habitat fragmentation or increased edge would likely increase the estimated adverse effect of the proposed action on marbled murrelets. Habitat fragmentation results in increased predation on nests of forest birds, and also allows for increased populations of predators. Corvids (i.e., crows, ravens, and jays) are edge species that would increase in numbers as edge increases. Marbled murrelet nests are highly susceptible to predation, primarily by corvids (Nelson 1993). Thus, it follows that habitat fragmentation has an effect on marbled murrelet nesting success. The size of old-growth forest patches is also important because marbled murrelets nest in loose colonies or aggregations.



A strategy for maintaining viable populations of old growth dependent species was developed which deferred areas from timber harvest. Figure 2 displays proposed habitat conservation areas (HCA). The proposed HCAs, within the project boundary, have been deferred from harvest in this project. With these reserves in place it is believed that, although individuals may be affected, this project would not result in a trend toward federal listing of marbled murrelets.




Proposed
Habitat Conservation Areas
and Goshawk Buffers



-  Private Lands
-  Northern Goshawk Nest Buffers

PROPOSED HABITAT
CONSERVATION AREAS:

-  Medium HCA
-  Large HCA

-  287 VCU
-  Project Area
-  VCU Boundaries

2 1 0 2 4
Scale in Miles



Cumulative effects

Approximately 19% of the acres of old growth (>8000 board feet per acre) have been removed during previous harvest. Up to 6% more old growth would be removed by this project. There are no timber sales planned after the proposed action.

Findings

This project may impact individuals, but is not likely to result in a trend toward federal listing or loss of viability.

NORTHERN GOSHAWK

Distribution and Populations

The northern goshawk is a species of concern and is also identified as a sensitive species by the Alaska Region of the Forest Service. It occurs in forested regions throughout the higher latitudes of the northern hemisphere. The species is uncommon in Southeast Alaska (Armstrong 1990).

The northern goshawk nests in old-growth forest habitat in Southeast Alaska. Suitable nesting habitat consists of forest stands at least 20 to 30 acres in size, with large trees, closed canopy, and low understory vegetation (USDA Forest Service 1991). These structural characteristics are important for providing nest and perch sites, for facilitating flight beneath the canopy and between trees, and perhaps for enhancing prey productivity (Crocker-Bedford 1993).

Surveys Conducted

In an effort to avoid timber harvest near goshawk nesting sites, Forest Service Biologists conducted surveys of proposed timber harvest units and road locations (Appendix C). Surveys were conducted in 1993, 1994 and 1995. Appendix D displays the location and intensity of surveys by value comparison unit (VCU) and potential harvest unit. Goshawk surveys were initiated based on probability of nesting habitat, previous goshawk observations and areas not previously surveyed. The surveys were then prioritized based on probability of nesting habitat. Probability was determined based on attributes of known nest sites in Southeast Alaska. Attributes included areas below 1000ft elevation, timber volume class greater than 8000 board feet/acre, slopes less than 75%, with landforms of broken mountainslope or hillslope, hills, footslope or valley bottom.

In unit 4082 a goshawk responded in 1994 but not in 1993 or 1995. This indicated a foraging area but probably not a nesting area. In units 3111 and 3112 a goshawk responded in 1994 but no nest site(s) were located indicating a forage area and probably not a nesting area.

A nest site with 3 fledglings was located on the Duffield Peninsula in 1994. In 1995 it was revisited. The nest contained two nestlings and one adult. This area has been deferred from consideration of timber harvest (Fig. 2).

A probable nest site was located in unit 7123 near Range Creek in 1994. A plucking pole was located, but a nest has not been located. This area has been deferred from consideration of timber harvest (Fig. 2).

Determination of Effects

Up to 6% of the remaining old growth (8000 board feet/acre or greater) would be removed from the Project Area.

Based on the three years of intensive surveys, there is high confidence that timber harvest will not remove any active nest trees. There will be a reduction in the number of potential nest trees and a decrease in the amount of forage area of goshawks.

Other impacts of timber harvest may include fragmentation, reduced foraging habitat quality, reduced prey densities, and increased competition from red-tailed hawks and other raptors (Crocker-Bedford 1990).

A strategy for maintaining viable populations of old growth dependent species was developed which deferred areas from timber harvest. Figure 2 displays proposed habitat conservation areas (HCA). The proposed HCAs, within the project boundry, have been deferred from harvest in this project. With these reserves in place it is believed that, although individuals may be affected, this project would not result in a trend toward federal listing of northern goshawks.

Cumulative effects

Approximately 19% of the acres of old growth (>8000 board feet per acre) have been removed during previous harvest. Up to 6% more old growth would be removed by this project. There are no timber sales planned after the proposed action.

Findings

This project may impact individuals, but is not likely to result in a trend toward federal listing or loss of viability.

OLIVE-SIDED FLYCATCHER

Distribution and Populations

The olive-sided flycatcher is a species of concern. It is uncommon in Southeast Alaska. This species nests in a variety of habitats including coniferous forest, open woodland, and muskegs. In Southeast Alaska, this species occurs primarily in second-growth forest and alder habitats, and occasionally in muskegs.

Determination of Effects

Short-term loss of habitat and displacement of individuals would occur from construction of roads through muskegs and clearing of alder from existing roads. In the long term, timber harvest would increase the amount of second growth, alder and edge habitats. Impacts to the olive-sided flycatcher may be beneficial in the long term.

Cumulative effects

There will be no adverse cumulative effects.

Findings

This project may impact individuals, but is not likely to result in a trend toward federal listing or loss of viability.

OSPREY

Distribution and Populations

The osprey is identified as a sensitive species by the Alaska Region of the

Forest Service. Ospreys are rare in Southeast Alaska (Armstrong 1990) and the only known nest sites in Southeast Alaska are located in the Stikine Area (USDA Forest Service 1991). There have been no reported observations in the Project Area. Because of this limited distribution in Southeast Alaska, ospreys are not expected to occur in the Project Area.

Determination of Effects

Ospreys would not be affected by the proposed action as this species is unlikely to occur in the Project Area.

Cumulative effects

There will be no cumulative effects.

Findings

There will be no impact on the species.

PEALE'S PEREGRINE FALCON

Distribution and Populations

The Peale's peregrine falcon is identified as a sensitive species by the Alaska Region of the Forest Service. They nest along the outer coast of the Gulf of Alaska. Nests are generally associated with large seabird colonies (USDA Forest Service 1991). The Project Area is not located along the outer coast, and there are no seabird colonies in the Project Area; therefore, Peale's peregrine falcons are not expected to occur in the Project Area.

Determination of Effects

Peale's peregrine falcon would not be affected by the proposed action as this species is unlikely to occur in the Project Area.

Cumulative effects

There will be no cumulative effects.

Findings

There will be no impact on the species.

TRUMPETER SWAN

Distribution and Populations

The trumpeter swan is identified as a sensitive species by the Alaska Region of the Forest Service. They nest at Yakutat and in the Chilkat Valley in Southeast Alaska. Numerous trumpeter swans from other parts of Alaska migrate through and winter in Southeast Alaska. They are considered rare in S.E. Alaska in winter except in Blind Slough near Petersburg (Armstrong 1990). They may use lake habitats (Armstrong 1990) in the Project Area but it is unlikely that they would overwinter because the lakes in the Project Area are small and usually freeze in the winter.

Determination of Effects

Individual trumpeter swans occurring in the Project Area could be temporarily disturbed by human activities associated with timber harvesting and road construction. No other impacts are expected to occur from the proposed action.

Cummulative effects

There will be no cummulative effects.

Findings

There will be no impact on the species.

MANAGEMENT RECOMMENDATIONS

If any previously undiscovered endangered, threatened, species of concern, or sensitive species are encountered at any point in time prior to or during implementation of this Project, the District Biologist and/or Forest Biologist will be consulted with and appropriate measures will be enacted.

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United States
Department of
Agriculture

Forest
Service

Alaska Region
Tongass National Forest
Chatham Area

Sitka Ranger District
201 Katlian, Suite 109
Sitka, Alaska 99835
(907) 747-6671

Reply To: 2640

Date: November 27, 1995

U.S. Fish and Wildlife Service
Ecological Services
Field Supervisor, Nevin Holmberg
3000 Vintage Blvd. #201
Juneau, AK 99801

Dear Mr. Holmberg:

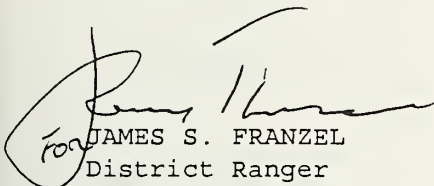
Please find enclosed for your review the Biological Assessment (BA)/
Biological Evaluations (BE) for the proposed Northwest Baranof Timber Sale.
The plant BA/BE was prepared separate from the animal BA/BE. Species of
Concern and U.S.D.A. Forest Service, Region 10 Sensitive Species were included
for your information.

We request concurrence with our findings for the Endangered and Threatened
Species which may occur in the project area, and conclusion of the informal
Section 7 consultation.

Included is our Northern Goshawk and Marbled Murrelet survey data that was
collected by the Sitka Ranger District in 1993, 1994, and 1995.

Thank you for your assistance. If you require additional information, please
contact Terry Suminski of my staff.

Sincerely,


JAMES S. FRANZEL
District Ranger

Enclosures (3)

951127 1035 PHG 2640 TS



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B 17



RECEIVED BY
SITKA RANGER DISTRICT

United States Department of the Interior

DEC 11 '95

FISH AND WILDLIFE SERVICE

Southeast Alaska Ecological Services
3000 Vintage Blvd., Suite 201
Juneau, Alaska 99801-7100
District Range

IN REPLY REFER TO:

James Franzel
USDA, Forest Service
Sitka Ranger District
201 Katlian, Suite 109
Sitka, AK 99835

Dear Mr. Franzel:

Timber		
Silviculture		
F & W		
R & L Management		
Compound		
Business		
Planning		
File		

December 5, 1995

The U.S. Fish and Wildlife Service has reviewed the November 27, 1995, biological assessment for the proposed Northwest Baranof Timber Sale, on Baranof Island, near Sitka, Alaska. The assessment evaluated the effects of proposed action on the endangered American peregrine falcon (Falco peregrinus anatum).

For the purposes of The Endangered Species Act, Section 7 consultation, we concur that populations of the American peregrine falcon would not likely be adversely affected as a result of the proposed project.

The biological assessment also considered the effects of the project on the Queen Charlotte Goshawk (Accipiter gentilis laingi), marbled murrelet Brachyramphus marmoratus, harlequin duck Histrionicus histrionicus, and olive-sided flycatcher Cantopus borealis, all Species of Concern for the Service. Although not required by the assessment process under the ESA, we appreciate your evaluation of the effects of the proposed project on these species.

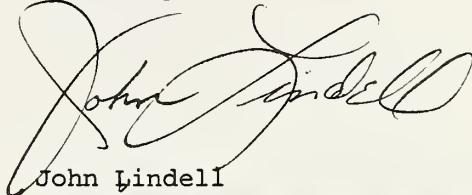
For the purposes of technical assistance, we offer the following comments for your consideration. Based on the evaluation of effects contained in the biological assessment, you have concluded that some degradation and fragmentation of old growth forest habitat has occurred in the proposed project area and that the proposed project would lead to the expansion of this area of impact. We are concerned about the additive effects such habitat degradation is having on species productivity and viability, particularly concerning Species of Concern. We encourage the Forest Service to implement a conservative ecosystem approach in the final planning for this proposed project.

These comments are offered for endangered and threatened species for which the U.S. Fish and Wildlife Service has responsibility under Section 7 of the Endangered Species Act of 1973 (16 USC 1521 et seq.) and its amendments. The above comments are specific to the Endangered Species Act and do not reflect agency concerns regarding other organisms or habitats for which the Service has legislated responsibilities.

B18

If you have any questions please contact Ed Grossman or myself at (907) 586-7240.

Sincerely,

A handwritten signature in cursive script, appearing to read "John Lindell". The signature is written in dark ink and is positioned above the printed name.

John Lindell
Endangered Species Specialist



United States
Department of
Agriculture

Forest
Service

Alaska Region
Tongass National Forest
Chatham Area

Sitka Ranger District
201 Katlian, Suite 109
Sitka, Alaska 99835
(907) 747-6671

Reply To: 2640

Date: November 27, 1995

Mr. Steven Pennoyer
National Marine Fisheries Service
P.O. Box 21668
Juneau, AK 99802-1668

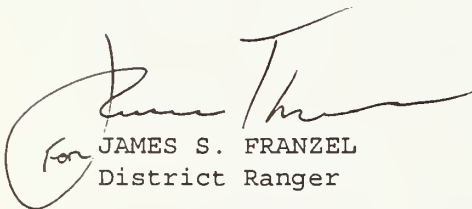
Dear Mr. Pennoyer:

Please find enclosed for your review the Biological Assessment (BA) / Biological Evaluations (BE) for the proposed Northwest Baranof Timber Sale. The plant BA/BE was prepared separate from the animal BA/BE. Species of Concern and U.S.D.A. Forest Service, Region 10 Sensitive Species were included for your information.

We request concurrence with our findings for the Endangered and Threatened Species which may occur in the project area, and conclusion of the informal Section 7 consultation.

Thank you for your assistance. If you require additional information, please contact Terry Suminski of my staff.

Sincerely,


For JAMES S. FRANZEL
District Ranger

Enclosures (2)

951127 1030 PHG 2640 TS



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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

January 16, 1996

James S. Franzel
District Ranger, Sitka Ranger District
Tongass National Forest
USDA Forest Service
201 Katlian, Suite 109
Sitka, Alaska 99835

Dear Mr. Franzel:

Thank you for your recent letter containing the Biological Assessment (BA) and Biological Evaluations (BE) for the proposed Northwest Baranof Timber Sale. The BA and BE evaluates the potential for effects to humpback whales and Steller sea lions as a result of harvesting timber, and constructing roads and log transfer facilities. You have determined that the proposed actions are not likely to affect these listed species.

We concur with your conclusion that the timber sale activities are not likely to affect endangered or threatened species within our purview. This concludes Section 7 consultation requirements for the Northwest Baranof study area. If new information or circumstances arise that could cause us to alter this determination, consultation pursuant to Section 7 of the ESA should be reinitiated. For further coordination regarding Section 7 consultation, contact Tamra Faris at (907) 586-7235.

Sincerely,

Steven Pennoyer
Director, Alaska Region



Appendix C

Harvest Unit Detail Tables

Northwest Baranof Timber Sale(s)

Alternative 1

Units	Acres	Harvest Method	Silvicultural Treatment	Percent Harvest (volume)	Harvest Volume (MBF)
Rodman Bay					
1221	32	Helicopter	Seed Tree	85	795
1231	26	Helicopter	Overstory Removal	70	530
1251	33	Helicopter	Clearcut w/ Reserves	95	930
1252	43	Helicopter	Seed Tree	85	1090
1271	21	Helicopter	Overstory Removal	80	479
1275	41	Helicopter	Group Selection	20	234
3041	25	Helicopter	Seed Tree	85	560
3043	10	Helicopter	Seed Tree	85	214
3051	17	Live Skyline/Helicopter	Seed Tree	85	365
3052	6	Helicopter	Clearcut w/ Reserves	95	144
3053	15	Live Skyline	Clearcut w/ Reserves	95	360
3054	47	Live Skyline	Clearcut w/ Reserves	95	1127
3055	22	Live Skyline	Clearcut w/ Reserves	95	527
3063	7	Live Skyline	Clearcut w/ Reserves	95	168
3111	12	Helicopter	Seed Tree	85	257
3112	6	Helicopter	Seed Tree	85	129
3132	20	Helicopter	Group Selection	20	117
Subtotal (in MMBF)					8.0
Rod 'n Apple					
3301	39	Live Skyline	Seed Tree	85	984
3304	32	Live Skyline	Seed Tree	85	741
3312	34	Live Skyline	Clearcut w/ Reserves	95	863
3313	30	Live Skyline	Clearcut w/ Reserves	95	806
3315	39	Live Skyline	Clearcut w/ Reserves	95	935
Subtotal (in MMBF)					4.3
Schulze Cove					
4031	32	Helicopter	Seed Tree	85	687
4041	48	Helicopter	Seed Tree	85	1046
4061	25	Helicopter	Seed Tree	85	536
4081	13	Running Skyline	Clearcut w/ Reserves	90	295
4082	69	Live Skyline	Clearcut w/ Reserves	95	1728
4083	28	Live Skyline	Clearcut w/ Reserves	95	758
4084	20	Helicopter	Clearcut w/ Reserves	95	519
4091	8	Live Skyline	Clearcut w/ Reserves	95	192
4092	17	Live Skyline/Helicopter	Clearcut w/ Reserves	95	408
4093	5	Live Skyline	Clearcut w/ Reserves	95	120
4094	5	Live Skyline	Seed Tree	85	107
4095	3	Live Skyline	Overstory Removal	90	68

Units	Acres	Harvest Method	Silvicultural Treatment	Percent Harvest (volume)	Harvest Volume (MBF)
5001	7	Live Skyline	Clearcut w/ Reserves	95	168
5002	7	Live Skyline	Clearcut w/ Reserves	95	168
5003	14	Live Skyline	Overstory Removal	90	359
5004	34	Live Skyline	Group Selection	20	203
5005	7	Live Skyline	Clearcut w/ Reserves	95	185
5011	12	Live Skyline	Clearcut w/ Reserves	95	331
5012	15	Live Skyline	Clearcut w/ Reserves	90	345
Subtotal (in MMBF)					8.2
St. John Baptist					
6271	30	Live Skyline	Overstory Removal	70	594
6272	14	Live Skyline	Group Selection	20	73
6281	31	Live Skyline	Clearcut w/ Reserves	95	748
6282	23	Helicopter	Overstory Removal	70	474
6283	8	Live Skyline	Clearcut w/ Reserves	95	218
6291	7	Helicopter	Overstory Removal	50	102
6293	28	Live Skyline	Overstory Removal	90	698
6301	22	Helicopter	Overstory Removal	80	525
6303	4	Live Skyline	Clearcut w/ Reserves	95	96
6304	9	Helicopter	Overstory Removal	80	182
6305	17	Live Skyline	Overstory Removal	70	300
6306	8	Live Skyline	Overstory Removal	70	141
6331	36	Live Skyline	Overstory Removal	80	727
6332	7	Live Skyline	Clearcut w/ Reserves	95	168
6333	11	Live Skyline	Clearcut w/ Reserves	90	250
6334	11	Live Skyline	Clearcut w/ Reserves	95	264
6391	3	Live Skyline	Clearcut w/ Reserves	95	72
7001	13	Live Skyline	Clearcut w/ Reserves	95	312
7002	18	Live Skyline	Clearcut w/ Reserves	95	432
7003	7	Live Skyline	Clearcut w/ Reserves	95	168
7004	19	Live Skyline	Clearcut w/ Reserves	95	455
7005	19	Helicopter	Clearcut w/ Reserves	95	455
7006	5	Live Skyline	Clearcut w/ Reserves	95	120
Subtotal (in MMBF)					7.6
Noxon Creek					
7161	22	Helicopter	Overstory Removal	70	389
7162	16	Live Skyline	Clearcut w/ Reserves	85	343
7163	13	Helicopter	Clearcut w/ Reserves	85	283
7164	4	Live Skyline	Clearcut w/ Reserves	95	96
7221	15	Helicopter	Overstory Removal	60	227
7222	4	Helicopter	Overstory Removal	85	86
7223	14	Helicopter	Overstory Removal	80	283
7262	12	Helicopter	Clearcut w/ Reserves	80	268
7264	9	Helicopter	Clearcut w/ Reserves	95	255

Units	Acres	Harvest Method	Silvicultural Treatment	Percent Harvest (volume)	Harvest Volume (MBF)
7272	23	Helicopter	Group Selection	20	116
7273	14	Helicopter	Group Selection	20	71
7281	38	Helicopter	Group Selection	20	202
7282	12	Helicopter	Group Selection	20	61
7283	27	Helicopter	Group Selection	20	160
7284	7	Helicopter	Group Selection	20	36
Subtotal (in MMBF)					29
Nakwasina Sound					
8011	6	Helicopter	Clearcut w/ Reserves	95	170
8021	6	Helicopter	Clearcut w/ Reserves	95	170
8022	11	Helicopter	Clearcut w/ Reserves	90	250
8032	4	Helicopter	Seed Tree	85	86
8061	11	Helicopter	Clearcut w/ Reserves	90	295
8062	11	Helicopter	Clearcut w/ Reserves	85	236
8063	14	Helicopter	Clearcut w/ Reserves	80	290
8064	16	Helicopter	Seed Tree	85	343
8065	12	Helicopter	Clearcut w/ Reserves	90	273
Subtotal (in MMBF)					21
Lisa Creek					
9011	30	Live Skyline	Clearcut w/ Reserves	85	643
9012	17	Live Skyline	Clearcut w/ Reserves	95	408
9021	29	Live Skyline/Helicopter	Clearcut w/ Reserves	90	683
9022	12	Helicopter	Clearcut w/ Reserves	90	281
9023	17	Helicopter	Clearcut w/ Reserves	90	456
9031	21	Helicopter	Overstory Removal	70	435
9052	8	Helicopter	Clearcut w/ Reserves	85	203
9061	8	Helicopter	Clearcut w/ Reserves	85	172
Subtotal (in MMBF)					33
Total (in MMBF)					36.4

Alternative 2

Units	Acres	Harvest Method	Silvicultural Treatment	Percent Harvest (volume)	Harvest Volume (MBF)
Rodman Bay					
1061	60	Helicopter	Group Selection	20	347
1065	8	Helicopter	Seed Tree	85	203
1071	24	Helicopter	Seed Tree	85	593
1072	14	Helicopter	Overstory Removal	80	286
1131	18	Helicopter	Seed Tree	85	417
1144	11	Helicopter	Overstory Removal	80	229
1145	83	Helicopter	Seed Tree	85	2080
1146	15	Helicopter	Clearcut w/ Reserves	95	399
1147	17	Helicopter	Group Selection	20	99
1171	30	Helicopter	Seed Tree	85	729
1172	48	Helicopter	Seed Tree	85	1185
1173	17	Helicopter	Seed Tree	85	372
1211	6	Helicopter	Seed Tree	85	144
1221	32	Helicopter	Seed Tree	85	795
1231	26	Helicopter	Overstory Removal	70	530
1251	33	Helicopter	Clearcut w/ Reserves	95	930
1252	43	Helicopter	Seed Tree	85	1090
1271	21	Helicopter	Overstory Removal	80	479
1275	41	Helicopter	Group Selection	20	234
2042	19	Helicopter	Clearcut w/ Reserves	95	455
2043	68	Helicopter	Clearcut w/ Reserves	95	1630
3002	24	Helicopter	Clearcut w/ Reserves	95	654
3011	48	Helicopter	Group Selection	20	260
3012	138	Helicopter	Clearcut w/ Reserves	70	2729
3014	36	Helicopter	Clearcut w/ Reserves	95	867
3015	94	Helicopter	Group Selection	20	545
3033	9	Helicopter	Seed Tree	85	193
3041	25	Helicopter	Seed Tree	85	560
3043	10	Helicopter	Seed Tree	85	214
3051	17	Live Skyline/Helicopter	Seed Tree	85	365
3052	6	Helicopter	Clearcut w/ Reserves	95	144
3053	15	Live Skyline	Clearcut w/ Reserves	95	360
3054	47	Live Skyline	Clearcut w/ Reserves	95	1127
3055	22	Live Skyline	Clearcut w/ Reserves	95	527
3061	14	Helicopter	Group Selection	20	71
3062	8	Live Skyline	Seed Tree	85	172
3063	7	Live Skyline	Clearcut w/ Reserves	95	168
3111	12	Helicopter	Seed Tree	85	257
3112	6	Helicopter	Seed Tree	85	129
3132	20	Helicopter	Group Selection	20	117
3141	32	Helicopter	Seed Tree	85	803
3142	54	Helicopter	Overstory Removal	70	1121
3143	28	Helicopter	Overstory Removal	70	556
3151	46	Helicopter	Seed Tree	85	1061
3201	17	Helicopter	Overstory Removal	80	370
3223	8	Helicopter	Overstory Removal	90	211

Units	Acres	Harvest Method	Silvicultural Treatment	Percent Harvest (volume)	Harvest Volume (MBF)
3224	10	Helicopter	Clearcut w/ Reserves	95	240
3281	25	Helicopter	Overstory Removal	70	442
3291	10	Helicopter	Seed Tree	85	253
Subtotal (in MMBF)					27.7
Rod 'n Apple					
3301	39	Live Skyline	Seed Tree	85	984
3302	20	Live Skyline	Seed Tree	85	507
3303	30	Live Skyline	Seed Tree	85	679
3305	46	Live Skyline	Clearcut w/ Reserves	95	1168
3311	26	Live Skyline	Clearcut w/ Reserves	95	710
3312	34	Live Skyline	Clearcut w/ Reserves	95	863
3314	33	Live Skyline	Seed Tree	85	809
Subtotal (in MMBF)					5.7
St. John Baptist					
6271	30	Live Skyline	Overstory Removal	70	594
6272	14	Live Skyline	Group Selection	20	73
6281	31	Live Skyline	Clearcut w/ Reserves	95	748
6282	23	Helicopter	Overstory Removal	70	474
6283	8	Live Skyline	Clearcut w/ Reserves	95	218
6291	7	Helicopter	Overstory Removal	50	102
6293	28	Live Skyline	Overstory Removal	90	698
6294	28	Helicopter	Overstory Removal	80	664
6301	22	Helicopter	Overstory Removal	80	525
6303	4	Live Skyline	Clearcut w/ Reserves	95	96
6304	9	Helicopter	Overstory Removal	80	182
6305	17	Live Skyline	Overstory Removal	70	300
6306	8	Live Skyline	Overstory Removal	70	141
6321	6	Live Skyline	Clearcut w/ Reserves	90	136
6322	16	Live Skyline	Clearcut w/ Reserves	90	363
6331	36	Live Skyline	Overstory Removal	80	727
6332	7	Live Skyline	Clearcut w/ Reserves	95	168
6333	11	Live Skyline	Clearcut w/ Reserves	90	250
6334	11	Live Skyline	Clearcut w/ Reserves	95	264
6341	36	Helicopter	Overstory Removal	50	537
6342	13	Live Skyline/Helicopter	Overstory Removal	60	202
6343	11	Live Skyline	Seed Tree	85	271
6344	10	Live Skyline	Seed Tree	85	214
6345	5	Live Skyline	Seed Tree	90	114
6361	20	Live Skyline	Clearcut w/ Reserves	95	493
6363	22	Live Skyline	Overstory Removal	60	333
6364	9	Live Skyline	Clearcut w/ Reserves	90	204
6371	13	Live Skyline	Clearcut w/ Reserves	95	368
6372	11	Live Skyline	Overstory Removal	70	194
6373	9	Live Skyline	Clearcut w/ Reserves	95	216

Units	Acres	Harvest Method	Silvicultural Treatment	Percent Harvest (volume)	Harvest Volume (MBF)
6391	3	Live Skyline	Clearcut w/ Reserves	95	72
7001	13	Live Skyline	Clearcut w/ Reserves	95	312
7002	18	Live Skyline	Clearcut w/ Reserves	95	432
7003	7	Live Skyline	Clearcut w/ Reserves	95	168
7004	19	Live Skyline	Clearcut w/ Reserves	95	455
7005	19	Helicopter	Clearcut w/ Reserves	95	455
7006	5	Live Skyline	Clearcut w/ Reserves	95	120
7291	14	Helicopter/Live Skyline	Overstory Removal	40	141
7292	12	Helicopter	Clearcut w/ Reserves	85	257
7293	34	Helicopter	Clearcut w/ Reserves	95	815
Subtotal (in MMBF)					13.1
Lisa Creek					
9011	30	Live Skyline	Clearcut w/ Reserves	85	643
9012	17	Live Skyline	Clearcut w/ Reserves	95	408
9021	29	Live Skyline/Helicopter	Clearcut w/ Reserves	90	683
9022	12	Helicopter	Clearcut w/ Reserves	90	281
9023	17	Helicopter	Clearcut w/ Reserves	90	456
9031	21	Helicopter	Overstory Removal	70	435
9041	35	Helicopter	Clearcut w/ Reserves	85	836
9051	41	Helicopter	Overstory Removal	80	923
9052	8	Helicopter	Clearcut w/ Reserves	85	203
9061	8	Helicopter	Clearcut w/ Reserves	85	172
9062	14	Helicopter	Clearcut w/ Reserves	95	336
Subtotal (in MMBF)					5.4
Total (in MMBF)					51.9

Alternative 3

Units	Acres	Harvest Method	Silvicultural Treatment	Percent Harvest (volume)	Harvest Volume (MBF)
Rodman Bay					
1061	60	Helicopter	Group Selection	20	347
1065	8	Helicopter	Seed Tree	85	203
1071	24	Helicopter	Seed Tree	85	593
1072	14	Helicopter	Overstory Removal	80	286
1131	18	Helicopter	Seed Tree	85	417
1171	30	Helicopter	Seed Tree	85	729
1172	48	Helicopter	Seed Tree	85	1185
1173	17	Helicopter	Seed Tree	85	372
1221	32	Helicopter	Seed Tree	85	795
1231	26	Helicopter	Overstory Removal	70	530
1251	33	Helicopter	Clearcut w/ Reserves	95	930
1252	43	Helicopter	Seed Tree	85	1090
1271	21	Helicopter	Overstory Removal	80	479
1275	41	Helicopter	Group Selection	20	234
2042	19	Helicopter	Clearcut w/ Reserves	95	455
2043	68	Helicopter	Clearcut w/ Reserves	95	1630
3002	24	Helicopter	Clearcut w/ Reserves	95	654
3011	48	Helicopter	Group Selection	20	260
3012	138	Helicopter	Clearcut w/ Reserves	70	2729
3014	36	Helicopter	Clearcut w/ Reserves	95	867
3015	94	Helicopter	Group Selection	20	545
3033	9	Helicopter	Seed Tree	85	193
3041	25	Helicopter	Seed Tree	85	560
3043	10	Helicopter	Seed Tree	85	214
3051	17	Live Skyline/Helicopter	Seed Tree	85	365
3052	6	Helicopter	Clearcut w/ Reserves	95	144
3053	15	Live Skyline	Clearcut w/ Reserves	95	360
3054	47	Live Skyline	Clearcut w/ Reserves	95	1127
3055	22	Live Skyline	Clearcut w/ Reserves	95	527
3061	14	Helicopter	Group Selection	20	71
3062	8	Live Skyline	Seed Tree	85	172
3063	7	Live Skyline	Clearcut w/ Reserves	95	168
3111	12	Helicopter	Seed Tree	85	257
3112	6	Helicopter	Seed Tree	85	129
3132	20	Helicopter	Group Selection	20	117
3141	32	Helicopter	Seed Tree	85	803
3142	54	Helicopter	Overstory Removal	70	1121
3143	28	Helicopter	Overstory Removal	70	556
3151	46	Helicopter	Seed Tree	85	1061
3201	17	Helicopter	Overstory Removal	80	370
3223	8	Helicopter	Overstory Removal	90	211
3224	10	Helicopter	Clearcut w/ Reserves	95	240
3281	25	Helicopter	Overstory Removal	70	442
3291	10	Helicopter	Seed Tree	85	253
Subtotal (in MMBF)					24.8

Units	Acres	Harvest Method	Silvicultural Treatment	Percent Harvest (volume)	Harvest Volume (MBF)
Rod 'n Apple					
3302	20	Live Skyline	Seed Tree	85	507
3304	32	Live Skyline	Seed Tree	85	741
3305	46	Live Skyline	Clearcut w/ Reserves	95	1168
3311	26	Live Skyline	Clearcut w/ Reserves	95	710
3312	34	Live Skyline	Clearcut w/ Reserves	95	863
3313	30	Live Skyline	Clearcut w/ Reserves	95	806
3314	33	Live Skyline	Seed Tree	85	809
Subtotal (in MMBF)					5.6
Schulze Cove					
4031	32	Helicopter	Seed Tree	85	686
4041	48	Helicopter	Seed Tree	85	1045
4061	25	Helicopter	Seed Tree	85	536
4081	13	Running Skyline	Clearcut w/ Reserves	90	295
4082	69	Live Skyline	Clearcut w/ Reserves	95	1728
4083	28	Live Skyline	Clearcut w/ Reserves	95	758
4084	20	Helicopter	Clearcut w/ Reserves	95	519
4091	8	Live Skyline	Clearcut w/ Reserves	95	192
4092	17	Live Skyline/Helicopter	Clearcut w/ Reserves	95	408
4093	5	Live Skyline	Clearcut w/ Reserves	95	120
4094	5	Live Skyline	Seed Tree	85	107
4095	3	Live Skyline	Overstory Removal	90	68
5001	7	Live Skyline	Clearcut w/ Reserves	95	168
5002	7	Live Skyline	Clearcut w/ Reserves	95	168
5003	14	Live Skyline	Overstory Removal	90	359
5004	34	Live Skyline	Group Selection	20	203
5005	7	Live Skyline	Clearcut w/ Reserves	95	185
5011	12	Live Skyline	Clearcut w/ Reserves	95	331
5012	15	Live Skyline	Clearcut w/ Reserves	90	345
5013	9	Live Skyline	Seed Tree	85	193
Subtotal (in MMBF)					8.4
Total (in MMBF)					38.8

Alternative 4

Units	Acres	Harvest Method	Silvicultural Treatment	Percent Harvest (volume)	Harvest Volume (MBF)
Rodman Bay					
1061	60	Helicopter	Group Selection	20	347
1065	8	Helicopter	Seed Tree	85	203
1071	24	Helicopter	Seed Tree	85	593
1072	14	Helicopter	Overstory Removal	80	286
1131	18	Helicopter	Seed Tree	85	417
1144	11	Helicopter	Overstory Removal	80	229
1145	83	Helicopter	Seed Tree	85	2080
1146	15	Helicopter	Clearcut w/ Reserves	95	399
1147	17	Helicopter	Group Selection	20	99
1171	30	Helicopter	Seed Tree	85	729
1172	48	Helicopter	Seed Tree	85	1185
1173	17	Helicopter	Seed Tree	85	372
1211	6	Helicopter	Seed Tree	85	144
1221	32	Helicopter	Seed Tree	85	795
1231	26	Helicopter	Overstory Removal	70	530
1251	33	Helicopter	Clearcut w/ Reserves	95	930
1252	43	Helicopter	Seed Tree	85	1090
1271	21	Helicopter	Overstory Removal	80	479
1275	41	Helicopter	Group Selection	20	234
2042	19	Helicopter	Clearcut w/ Reserves	95	455
2043	68	Helicopter	Clearcut w/ Reserves	95	1630
3002	24	Helicopter	Clearcut w/ Reserves	95	654
3011	48	Helicopter	Group Selection	20	260
3012	138	Helicopter	Clearcut w/ Reserves	70	2729
3014	36	Helicopter	Clearcut w/ Reserves	95	867
3015	94	Helicopter	Group Selection	20	545
3033	9	Helicopter	Seed Tree	85	193
3041	25	Helicopter	Seed Tree	85	560
3043	10	Helicopter	Seed Tree	85	214
3051	17	Live Skyline/Helicopter	Seed Tree	85	365
3052	6	Helicopter	Clearcut w/ Reserves	95	144
3053	15	Live Skyline	Clearcut w/ Reserves	95	360
3054	47	Live Skyline	Clearcut w/ Reserves	95	1127
3055	22	Live Skyline	Clearcut w/ Reserves	95	527
3061	14	Helicopter	Group Selection	20	71
3062	8	Live Skyline	Seed Tree	85	172
3063	7	Live Skyline	Clearcut w/ Reserves	95	168
3111	12	Helicopter	Seed Tree	85	257
3112	6	Helicopter	Seed Tree	85	129
3132	20	Helicopter	Group Selection	20	117
3141	32	Helicopter	Seed Tree	85	803
3142	54	Helicopter	Overstory Removal	70	1121
3143	28	Helicopter	Overstory Removal	70	556
3151	46	Helicopter	Seed Tree	85	1061
3201	17	Helicopter	Overstory Removal	80	370
3223	8	Helicopter	Overstory Removal	90	211

Units	Acres	Harvest Method	Silvicultural Treatment	Percent Harvest (volume)	Harvest Volume (MMBF)
3224	10	Helicopter	Clearcut w/ Reserves	95	240
3281	25	Helicopter	Overstory Removal	70	442
3291	10	Helicopter	Seed Tree	85	253
Subtotal (in MMBF)					27.7
Rod 'n Apple					
3301	39	Live Skyline	Seed Tree	85	984
3302	20	Live Skyline	Seed Tree	85	507
3303	30	Live Skyline	Seed Tree	85	679
3304	32	Live Skyline	Seed Tree	85	741
3305	46	Live Skyline	Clearcut w/ Reserves	95	1168
3311	26	Live Skyline	Clearcut w/ Reserves	95	710
3312	34	Live Skyline	Clearcut w/ Reserves	95	863
3313	30	Live Skyline	Clearcut w/ Reserves	95	806
3314	33	Live Skyline	Seed Tree	85	809
Subtotal (in MMBF)					7.3
Schulze Cove					
4031	32	Helicopter	Seed Tree	85	686
4041	48	Helicopter	Seed Tree	85	1045
4061	25	Helicopter	Seed Tree	85	536
4081	13	Running Skyline	Clearcut w/ Reserves	90	295
4082	69	Live Skyline	Clearcut w/ Reserves	95	1728
4083	28	Live Skyline	Clearcut w/ Reserves	95	758
4084	20	Helicopter	Clearcut w/ Reserves	95	519
4091	8	Live Skyline	Clearcut w/ Reserves	95	192
4092	17	Live Skyline/Helicopter	Clearcut w/ Reserves	95	408
4093	5	Live Skyline	Clearcut w/ Reserves	95	120
4094	5	Live Skyline	Seed Tree	85	107
4095	3	Live Skyline	Overstory Removal	90	68
5001	7	Live Skyline	Clearcut w/ Reserves	95	168
5002	7	Live Skyline	Clearcut w/ Reserves	95	168
5003	14	Live Skyline	Overstory Removal	90	359
5004	34	Live Skyline	Group Selection	20	203
5005	7	Live Skyline	Clearcut w/ Reserves	95	185
5011	12	Live Skyline	Clearcut w/ Reserves	95	331
5012	15	Live Skyline	Clearcut w/ Reserves	90	345
5013	9	Live Skyline	Seed Tree	85	193
Subtotal (in MMBF)					8.4

Units	Acres	Harvest Method	Silvicultural Treatment	Percent Harvest (volume)	Harvest Volume (MBF)
St. John Baptist					
6271	30	Live Skyline	Overstory Removal	70	594
6272	14	Live Skyline	Group Selection	20	73
6281	31	Live Skyline	Clearcut w/ Reserves	95	748
6282	23	Helicopter	Overstory Removal	70	474
6283	8	Live Skyline	Clearcut w/ Reserves	95	218
6291	7	Helicopter	Overstory Removal	50	102
6293	28	Live Skyline	Overstory Removal	90	698
6294	28	Helicopter	Overstory Removal	80	664
6301	22	Helicopter	Overstory Removal	80	525
6303	4	Live Skyline	Clearcut w/ Reserves	95	96
6304	9	Helicopter	Overstory Removal	80	182
6305	17	Live Skyline	Overstory Removal	70	300
6306	8	Live Skyline	Overstory Removal	70	141
6321	6	Live Skyline	Clearcut w/ Reserves	90	136
6322	16	Live Skyline	Clearcut w/ Reserves	90	363
6331	36	Live Skyline	Overstory Removal	80	727
6332	7	Live Skyline	Clearcut w/ Reserves	95	168
6333	11	Live Skyline	Clearcut w/ Reserves	90	250
6334	11	Live Skyline	Clearcut w/ Reserves	95	264
6341	36	Helicopter	Overstory Removal	50	537
6342	13	Live Skyline/Helicopter	Overstory Removal	60	202
6343	11	Live Skyline	Seed Tree	85	271
6344	10	Live Skyline	Seed Tree	85	214
6345	5	Live Skyline	Seed Tree	90	114
6361	20	Live Skyline	Clearcut w/ Reserves	95	493
6363	22	Live Skyline	Overstory Removal	60	333
6364	9	Live Skyline	Clearcut w/ Reserves	90	204
6371	13	Live Skyline	Clearcut w/ Reserves	95	368
6372	11	Live Skyline	Overstory Removal	70	194
6373	9	Live Skyline	Clearcut w/ Reserves	95	216
6391	3	Live Skyline	Clearcut w/ Reserves	95	72
7001	13	Live Skyline	Clearcut w/ Reserves	95	312
7002	18	Live Skyline	Clearcut w/ Reserves	95	432
7003	7	Live Skyline	Clearcut w/ Reserves	95	168
7004	19	Live Skyline	Clearcut w/ Reserves	95	455
7005	19	Helicopter	Clearcut w/ Reserves	95	455
7006	5	Live Skyline	Clearcut w/ Reserves	95	120
7291	14	Helicopter/Live Skyline	Overstory Removal	40	141
7292	12	Helicopter	Clearcut w/ Reserves	85	257
7293	34	Helicopter	Clearcut w/ Reserves	95	815
Subtotal (in MMBF)					13.1
Noxon Creek					
7161	22	Helicopter	Overstory Removal	70	389
7162	16	Live Skyline	Clearcut w/ Reserves	85	343
7163	13	Helicopter	Clearcut w/ Reserves	85	283

Units	Acres	Harvest Method	Silvicultural Treatment	Percent Harvest (volume)	Harvest Volume (MMBF)
7164	4	Live Skyline	Clearcut w/ Reserves	95	96
7221	15	Helicopter	Overstory Removal	60	227
7222	4	Helicopter	Overstory Removal	85	86
7223	14	Helicopter	Overstory Removal	80	283
7262	12	Helicopter	Clearcut w/ Reserves	80	268
7264	9	Helicopter	Clearcut w/ Reserves	95	255
7272	23	Helicopter	Group Selection	20	116
7273	14	Helicopter	Group Selection	20	71
7281	38	Helicopter	Group Selection	20	202
7282	12	Helicopter	Group Selection	20	61
7283	27	Helicopter	Group Selection	20	160
7284	7	Helicopter	Group Selection	20	36
Subtotal (in MMBF)					2.9
Nakwasina Sound					
8011	6	Helicopter	Clearcut w/ Reserves	95	170
8021	6	Helicopter	Clearcut w/ Reserves	95	170
8022	11	Helicopter	Clearcut w/ Reserves	90	250
8032	4	Helicopter	Seed Tree	85	86
8061	11	Helicopter	Clearcut w/ Reserves	90	295
8062	11	Helicopter	Clearcut w/ Reserves	85	236
8063	14	Helicopter	Clearcut w/ Reserves	80	290
8064	16	Helicopter	Seed Tree	85	343
8065	12	Helicopter	Clearcut w/ Reserves	90	273
Subtotal (in MMBF)					21
Lisa Creek					
9011	30	Live Skyline	Clearcut w/ Reserves	85	643
9012	17	Live Skyline	Clearcut w/ Reserves	95	408
9021	29	Live Skyline/Helicopter	Clearcut w/ Reserves	90	683
9022	12	Helicopter	Clearcut w/ Reserves	90	281
9023	17	Helicopter	Clearcut w/ Reserves	90	456
9031	21	Helicopter	Overstory Removal	70	435
9041	35	Helicopter	Clearcut w/ Reserves	85	836
9051	41	Helicopter	Overstory Removal	80	923
9052	8	Helicopter	Clearcut w/ Reserves	85	203
9061	8	Helicopter	Clearcut w/ Reserves	85	172
9062	14	Helicopter	Clearcut w/ Reserves	95	336
Subtotal (in MMBF)					5.4
Total (in MMBF)					59.6

C-14

Appendix D

Road Management Objectives (RMOs)

RMO DEFINITIONS

Road Status:

- E = Existing road.
- E(R) = Existing road, scheduled for reconstruction.
- P = Proposed for construction.

Service Life (the length of time that a facility is expected to provide a specified service):

Intermittent service road = A long-term road developed and operated for periodic service.

Short-term road = A road developed and operated for a limited period of time (less than 10 years).

Functional Classification (the way in which a road services land and resource management needs and the character of service it provides):

- A = Arterial road. Provides service to large land areas and usually connect with other arterial roads or public highways.. (Due to the remoteness of the 8-Fathom Project Area, and the fact that the road systems planned for the area are small and not interconnected, no roads are classified as arterials.)
- C = Collector road. Serves smaller land areas than an arterial road. Usually connects arterial roads to local roads or terminal facilities.
- L = Local road. Connects terminal facilities with other local, collector, or arterial roads, and public highways. Usually local roads are for a single purpose, e.g. timber harvest.

Post-Harvest Maintenance Level (the level of service provided by, and maintenance required for, a specific road after harvest):

Level 1 = Level of maintenance assigned to intermittent service roads during the period they are not open and maintained for motor vehicle traffic. At this level, basic custodial maintenance is performed to keep damage to adjacent resources at an acceptable level and to perpetuate the road to facilitate future management activities.

Level 1 is also assigned, in the 8-Fathom RMO summary tables, to short-term road after the purpose for which they were constructed is completed. At this level, drainage structures are removed and the roadbed is waterbarred, to prevent damage to adjacent resources.

Level 2 = Level of maintenance normally assigned to roads needed by high clearance vehicles between periods of harvest. Planned post-harvest vehicle traffic in the 8-Fathom Project Area is expected to be either high clearance vehicles (HCV) or all-terrain vehicles (ATV), to accomplish administrative and recreation access objectives. Roads will be logged out and brushed as necessary to provide passage for ATV's. The road prism will

be maintained to provide for passage of high clearance vehicles. Barricades will be placed at the entrance of each road, maintained at this level, for ATV access, to effectively block vehicles greater than 50" in width.

Post-Harvest Public/Recreation Traffic Strategies (strategies employed where necessary to control any class or type of traffic. Use to prevent damage to the roadway, to abate unsafe traffic conditions, or to control use to meet other specific management direction such as protecting wildlife habitat or achieving semiprimitive recreation objectives):

Encourage = Engourage public use by means of appropriate signing, public notification, and active maintenance of the road prism.

Accept = Public use is allowed , but not encouraged, while road is maintained for administrative access.

Discourage = Public access is discouraged by means of allowing alder growth at road entrance, non-removal of blowdown, or road prism deterioration within acceptable environmental limits. Road may also be signed to discourage use: "Not Maintained for Public Traffic".

Eliminate = Road is physically blocked to after sale traffic. Where prescribed for long-term intermittent roads, this strategy is achieved by means of placement of impassable barricades at road entrances. On short-term roads, removal of drainage structures effectively block traffic.

Prohibit = Public access is prohibited by a road order (i.e. CFR closure). Implementation of this strategy on remote road systems such as 8-Fathom, may require the installation of gates, in addition to public notification and appropriate signing.

Prohibit Seasonally = Road is closed to public access at times during the normal operating year. For all alternatives, seasonal access prohibitions will be used if necessary to mitigate impacts to wildlife and subsistence resources (e.g. closure during either-sex deer hunting season, goshawk nest area). Administrative and permitted use of the roads will continue during closure periods, but only for specific permitted uses. Seasonal closures may be used in combination with cooperative efforts with fish and game protective agencies.

TRAFFIC CODES: LCV = Low Clearance Vehicle

HCV = High Clearance Vehicle

RV = Recreation Vehicle

ATV = All Terrain or Off-Road Vehicle

ALTERNATIVE 1

Ped = Pedestrian

VOLUME	ROAD NUMBER	ROAD MILES	ROAD STATUS	SERVICE LIFE	FUNCTION CLASS	HARVEST MAINT. LEVEL	POST-HARVEST				POST-HARVEST RESOURCE CONCERNS (SEE ROAD CARDS)			
							ACCESS NEEDS/TRAFFIC STRATEGIES		POST-HARVEST		CONCERNS (SEE ROAD CARDS)		POST-HARVEST RESOURCE	
							FUTURE	SILVIC/ADMIN	PUBLIC/RECREATION	HYDRO/SOILS	SUB-SIS.	FISH	W/L	FISH
287	7525	1.2	P	INTERMITTENT	C	1			ELIMINATE					
288	7525	3.9	P	INTERMITTENT	C	1		-	ELIMINATE					-
291	7587	2.4	E	INTERMITTENT	C	2			ACCEPT					
292	7586	1.6	E	INTERMITTENT	C	2			ACCEPT					
7587		2.8	E	INTERMITTENT	C	2			ACCEPT					
75873		2.0	P	INTERMITTENT	L	1			ELIMINATE					
75882		1.7	P	INTERMITTENT	C	2			ACCEPT					
758823		0.4	P	INTERMITTENT	L	1			ELIMINATE					
299	7574	0.4	E	INTERMITTENT	C	1			ELIMINATE					
300	7574	2.7	E/P	INTERMITTENT	C	1			ELIMINATE					
75831		0.9	P	INTERMITTENT	C	2			ACCEPT					
75831S		0.8	P	INTERMITTENT	L	1		-	DISCOURAGE					-
758316		0.6	P	INTERMITTENT	L	1			ELIMINATE					
301	7558	1.0	E	INTERMITTENT	C	1			ELIMINATE					-
75581		1.0	P	INTERMITTENT	C	1			ELIMINATE					
302	7583	0.6	E	INTERMITTENT	C	2		-	ACCEPT					-
75831		6.2	E/P	INTERMITTENT	C	2			ACCEPT					
758313		0.7	P	INTERMITTENT	L	1		-	ELIMINATE					-
758315		0.8	P	INTERMITTENT	L	1			ELIMINATE					-
75831S		0.1	P	INTRMITTENT	L	1			DISCOURAGE					

TRAFFIC CODES: LCV = Low Clearance Vehicle HCV = High Clearance Vehicle
RV = Recreation Vehicle ATV = All Terrain or Off-Road Vehicle
Ped = Pedestrian

VCU NUMBER	ROAD MILES	ROAD STATUS	SERVICE LIFE	FUNCT. CLASS	POST-HARVEST MAINT. LEVEL	POST-HARVEST ACCESS NEEDS/TRAFFIC STRATEGIES				POST-HARVEST RESOURCE CONCERNS (SEE ROAD CARDS)			
						FUTURE CORREL VOL	SILVIC/ ADMIN	PUBLIC/ RECREATION	HYDRO/ SOILS	SUB- V/L	SIS.	FISH	
291 7587	5.1	E	INTERMITTENT	C	1			ELIMINATE	-		-		
292 7586	1.1	E	INTERMITTENT	C	1			ELIMINATE	-		-		
7587	2.8	E	INTERMITTENT	C	1			ELIMINATE	-		-		
75873	2.0	P	INTERMITTENT	L	1			ELIMINATE					
75882	1.6	P	INTERMITTENT	C	1			ELIMINATE					
758823	0.4	P	INTERMITTENT	L	1			ELIMINATE					
293 75882	1.8	E/P	INTERMITTENT	C	1			ELIMINATE	-		-		
7722W	1.1	E	INTERMITTENT	C	1			ELIMINATE	-		-		
7728	0.3	E	INTERMITTENT	C	1		-	ELIMINATE			-		
300 75831	0.7	P	INTERMITTENT	C	1			ELIMINATE					
75831S	1.9	P	INTERMITTENT	C	1		-	ELIMINATE			-		
758316	0.6	P	INTERMITTENT	L	1			ELIMINATE					
301 7558	2.3	E	INTERMITTENT	C	1		-	ELIMINATE	-		-		
302 7583	0.6	E	INTERMITTENT	C	2		-	ACCEPT			-		
75831	5.5	E/P	INTERMITTENT	C	2			ACCEPT					
758311	0.8	P	INTERMITTENT	L	1			ELIMINATE	-		-		
758313	0.7	P	INTERMITTENT	L	1		-	ELIMINATE			-		
758315	0.8	P	INTERMITTENT	L	1			ELIMINATE	-		-		
75831S	1.7	P	INTERMITTENT	C	2		-	ACCEPT			-		

TRAFFIC CODES: LCV = Low Clearance Vehicle HCV = High Clearance Vehicle
RV = Recreation Vehicle ATV = All Terrain or Off-Road Vehicle
Ped = Pedestrian

ALTERNATIVE 3

ROAD NUMBER	ROAD MILES	ROAD STATUS	SERVICE LIFE	FUNCT. CLASS	POST-HARVEST MAINT. LEVEL	POST-HARVEST ACCESS NEEDS/TRAFFIC STRATEGIES				POST-HARVEST RESOURCE CONCERNS (SEE ROAD CARDS)			
						FUTURE	SILVIC/ADMIN	PUBLIC/RECREATION	HYDRO/BOILS	SUB-W/L	FISH	SIS.	FISH
287 7525	1.2	P	INTERMITTENT	C	2		-	DISCOURAGE					
288 7525	3.9	P	INTERMITTENT	C	2			DISCOURAGE					
291 7587	5.1	E	INTERMITTENT	C	1			ELIMINATE	-				
292 7586	1.1	E	INTERMITTENT	C	1			ELIMINATE	-				
7587	2.8	E	INTERMITTENT	C	1			ELIMINATE	-				
75873	2.0	P	INTERMITTENT	L	1			ELIMINATE					
75882	2.3	P	INTERMITTENT	C	2			DISCOURAGE					
758823	0.4	P	INTERMITTENT	L	1			ELIMINATE	-				

TRAFFIC CODES: LCV = Low Clearance Vehicle HCV = High Clearance Vehicle
RV = Recreation Vehicle ATV = All Terrain or Off-Road Vehicle
Ped = Pedestrian

VOLUME	ROAD NUMBER	ROAD MILES	ROAD STATUS	SERVICE LIFE	FUNCTION CLASS	HARVEST MAINT. LEVEL	POST-HARVEST				POST-HARVEST RESOURCE CONCERNS (SEE ROAD CARDS)				
							FUTURE	ACCESS NEEDS	TRAFFIC STRATEGIES	PUBLIC/	HYDRO/	SOILS	W/L	SUB-	FISH
							COMMIT VOL	ADMIN	RECREATION						
287	7525	1.2	P	INTERMITTENT	C	2			DISCOURAGE						
288	7525	3.9	P	INTERMITTENT	C	2			DISCOURAGE						
291	7587	5.1	E	INTERMITTENT	C	1			ELIMINATE						
292	7586	1.1	E	INTERMITTENT	C	1			ELIMINATE						
	7587	2.8	E	INTERMITTENT	C	1			ELIMINATE						
	75873	2.0	P	INTERMITTENT	L	1			ELIMINATE						
	75882	2.3	P	INTERMITTENT	C	2			DISCOURAGE						
	758823	0.4	P	INTERMITTENT	L	1			ELIMINATE						
299	7574	0.4	P	INTERMITTENT	C	1			ELIMINATE						
300	7574	2.7	E/P	INTERMITTENT	C	1			ELIMINATE						
	7583	0.5	E	INTERMITTENT	C	2			ACCEPT						
	75831	0.7	P	INTERMITTENT	C	2			ACCEPT						
	75831S	1.9	P	INTERMITTENT	C	2			ACCEPT						
	758316	0.5	P	INTERMITTENT	L	1			DISCOURAGE						
	7585	0.9	E	INTERMITTENT	C	2			ACCEPT						
	75851	1.0	P	INTERMITTENT	L	2			ACCEPT						
301	7558	1.0	E	INTERMITTENT	C	1			ELIMINATE						
	75581	1.0	P	INTERMITTENT	C	1			ELIMINATE						

TRAFFIC CODES: LCV = Low Clearance Vehicle

RV = Recreation Vehicle

HCV = High Clearance Vehicle

ATV = All Terrain or Off-Road Vehicle

Ped = Pedestrian

VCU NUMBER	ROAD NUMBER	ROAD MILES	ROAD STATUS	SERVICE LIFE	FUNCT. CLASS	POST-HARVEST MAINT. LEVEL	POST-HARVEST ACCESS NEEDS/TRAFFIC STRATEGIES				POST-HARVEST RESOURCE CONCERNS (SEE ROAD CARDS)			
							FUTURE	SILVIC/ ADMIN	PUBLIC/ RECREATION	HYDRO/ SOILS	W/L	SUB- SIS.	FISH	
302	7583	1.1	E	INTERMITTENT	C	2		-	ACCEPT			-	-	
	75831	5.1	E/P	INTERMITTENT	C	2			ACCEPT					
	758311	0.8	P	INTERMITTENT	L	1			ELIMINATE	-		-		
	758313	0.7	P	INTERMITTENT	L	1		-	ELIMINATE			-		
	758314	0.8	P	INTERMITTENT	L	1			ELIMINATE					
	758315	0.8	P	INTERMITTENT	L	1			ELIMINATE	-		-		
	75831S	1.7	P	INTERMITTENT	C	2		-	ACCEPT			-		

Appendix E

Log Transfer Facility

Dive Reports and

404(b) Analysis

Dive Reports for Existing Log Transfer Facility Sites in the Northwest Baranof Project Area

Introduction and Methods

Diving for proposed LTF sites was done in September 1994 by Bob Boes and Tim White using sport scuba gear. Bob Boes is a marine biologist with 17 years diving experience in Southeast Alaska. Bob earned his degree from the University of Florida. Bob has been teaching scuba and diving Southeast since 1977. He has also done several recent LTF studies for the Forest Service. Tim White is a marine biologist with a specialty in fisheries biology. Tim is a graduate of Sheldon Jackson College. Tim is also a padi divemaster with 5 years of diving experience in Southeast Alaska.

Diving was conducted using traditional sport scuba gear with digital depth gauges. Digital gauges are more accurate than analog gauges used in the past, so depth readings are more accurate especially in more shallow water.

A 300-foot transect tape was laid out along the bottom using predetermined compass headings, established from points on shore. The USFS set up the shore sites using rebar and stakes to mark the beginning of each transect. A total of 5 transects were done, spaced 100 feet apart and covering a total area of 400 feet.

A 10-foot square was established every 25 feet along each 300-foot transect. Bottom composition was noted as well as counting all plant and animal life. Where things such as acorn barnacles, limpets, etc, were too numerous to count, a one-foot by one-foot area was established along the same point on each transect. If animals such as acorn barnacles were too numerous it was noted by the value 100 plus.

Buoy and dye tests were conducted at the site during several stages of the tide. A low profile buoy was used so wind would not be a factor. The buoy was timed over a set distance. One tablespoon of concentrated dye was used and dispersal rate was timed.

Complete reports for each LTF dive are filed in the Project Planning Record at the Forest Supervisor's Office, 204 Siginaka Way, Sitka, Alaska.

Rodman Bay

Rodman Bay's benthic habitat is not unlike most other bays of its type. The proposed LTF site did have some unique habitat created by the fact that it has already been used as a log transfer site some years back. The amount of old garbage, cable, engine blocks, tires, etc., was too numerous to note on individual transects so we left it for our discussion now. While we feel that the amount of benthic life in the proposed area is in no way significant, or sensitive, it's nice to see that the life there is taking advantage of what we left behind years ago. Every transect had some significant amount of debris creating habitat especially for animals such as the coonstripe shrimp. Their concentrations were probably higher because of the artificial habitat.

The buoy and dye tests done show good flushing action. The current, while not strong, could be felt while submerged. The buoy covered approximately 300 feet in an hour, while the dye dispersed in one hour. One tablespoon of concentrated dye was used.

In conclusion no sensitive habitat or significant amount of marine life was found, making Rodman bay, from the underwater perspective, a good site for a log transfer site

Schulze Cove

Schulze Cove has been used for a log storage facility for quite some time. The bark accumulations especially in the deeper areas show it. There are numerous whole logs and some debris covering the area studied. In areas where the fungus was noted very little life was seen. Our overall impression of the area was that it was very barren and void of life.

The small band of eel grass did support some minimal life, but we did not notice any significant or sensitive habitat. No concentrations of shellfish were noted.

Buoy tests showed low a flow rate of approximately 100 ft. in four hours. It was tried twice further out with little change. One tablespoon of dye dispersed in two hours.

In conclusion we found absolutely no significant or sensitive habitat of any kind, yet because the maximum depth was only 40 feet and flushing action was poor, a closer look may need to be taken.

St. John Baptist Bay

The St. John site is similar in many ways to the Rodman Bay site. The greatest concentration of animal life was found in and around the man made debris, left from the previous logging operation. The amount of animal life found was very minimal on all transects. No concentrations of shellfish were found. One small school of pink salmon (*oncorhynchus gorbuscha*) was noted while swimming one of the transects.

Buoy tests were conducted and showed moderate to good flow rates. The buoy traveled about 250 feet in one hour. One tablespoon of dye dispersed in 1.5 hours. A very moderate current could be felt while swimming.

No significant or sensitive habitat was noted making this site in St. John Baptist Bay, from the underwater perspective, a good site once again for a log transfer site.

Noxon Creek

The diving conditions were very similar to the conditions found at the Nakwasina Passage site. They are both found at the end of a narrow stretch of water branching out to a larger body of water, creating very good flow conditions. The life found at both locations was very similar also. While we did find a fair number of animals, we found no nesting or breeding habitat. We also covered an area approximately 100 yards beyond both ends of the transect area to try and determine if there was any sensitive habitat. None was found. We did not feel that the numbers and types of animals found were in any way significant.

The buoy tests showed very good flow and flush rate. It moved approximately 400 feet in one hour. The tablespoon of dye dispersed in less than 20 minutes. A large exposed rock approximately 200 yards off shore probably helps the flow rate by channeling water through a tighter area. Current could be felt both submerged and on the surface.

In conclusion no significant or sensitive habitat or animal life was found, making Noxon creek, from the underwater view, a good spot for an LTF site.

Nakwasina Passage

While diving Nakwasina we did count more life than in other areas that were studied, yet we did not feel that the amount was in any way significant. The most sensitive animal, particularly from a commercial harvest standpoint, was the dungeness crab (*cancer magister*). While we did find some crab we did not notice any evidence of rearing or spawning activity anywhere in or even outside the transect area. We swam an area approximately 100 yards beyond each end of the transect area to make certain that there was no spawning activity going on. There are areas inside Nakwasina Sound that do support spawning activity but an LTF site in this location should not adversely affect any of them.

The depth did not exceed 40 feet on any of our transects and it was a gradually sloping bottom.

The flush rate is excellent. Our buoy took off at a rate that far exceeded our expectations, in fact we lost it. While diving it was hard to keep the transects straight because of the current flow both submerged and at the surface. Flushing rate at this site will not be a problem. One tablespoon of dye dispersed in approximately 20 minutes.

In conclusion we did not find any sensitive or significant habitat and we feel that as long as the depths and slope listed did not present a problem, Nakwasina Passage would make an excellent LTF site, from the underwater perspective.

Lisa Creek

The proposed Lisa Creek site is in Nakwasina Sound, along a part of the shore that has extremely steep drop-offs. None of the transects reached the 300 foot mark on the tape. This site must have been used as a log storage area sometime in the past judging by all the log debris and bark found. There are numerous logs, branches and twigs resting on the bottom. In trying to measure the bark depth we found it had no depth other than the thickness of the bark itself, it was just spread out over a wide area.

We found no sensitive habitat or concentrations of animals that we would deem significant.

The flushing action was good. The buoy covered an area of 300 feet in 1 hour, while the tablespoon of dye dispersed in about 1 half hour. There was a mild surface current making it harder to get the transects straight.

From the underwater perspective no significant or sensitive habitat was found making Lisa Creek an acceptable place for a log transfer site.

Northeast Rodman Bay

This site was investigated during the preparation of the Kelp Bay Timber Sale EIS by Bill Hughes (US Fish and Wildlife Service) and Duane Peterson (National Marine Fisheries Service) using scuba gear. A hundred meter transect was laid out at 90 degrees from the beach. Water depth along the transect was relatively shallow (12 meters). However, water depth increases rapidly and the bottom drops off to deeper waters of Rodman Bay (>60 M) seaward of the end of the transect. Flushing action at this site is considered good. No significant impacts are expected at this site.

Evaluation of Log Transfer Facilities
Using 404(b)(1) Guidelines of the Clean Water Act.

Guidelines governing siting, construction, operation and monitoring the log transfer facilities under 40 CFR 230.12(a)(3) reads as follows:

V. Log Transfer Facilities Siting, Construction, Operation and Monitoring
A. Site log transfer facilities in locations which best avoid or minimize potential impacts on water quality, aquatic habitat and other resources. During site analysis, cooperate with State and Federal agencies per stipulations in Memoranda of Understanding or cooperative agreements to assemble required data and evaluate alternatives.

Evaluate alternatives using the 404(b)(1) guidelines to determine if "(i) There is a practicable alternative to the proposed discharge that would have less adverse effect on the aquatic ecosystem, so long as such alternatives does not have other significant adverse environmental consequence; or (ii) the proposed discharge will result in significant degradation of the aquatic ecosystem; or (iii) The proposed discharge does not include all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem; (iv) There does not exist sufficient information to make a reasoned judgement as to whether the proposed discharge will comply with these Guidelines.

Log transfer facilities proposed under the various action alternatives for the Northwest Baranof Project were evaluated on the basis of items i through iv noted above. That evaluation follows.

Proposed LTF: Lisa Creek

Evaluation of Alternatives

(i) There is a practicable alternative to the proposed discharge that would have less adverse effect on the aquatic ecosystem, so long as such alternative does not have other significant adverse environmental consequences.

Description

Proposed acres of tentatively suitable to be harvested under the Northwest Baranof Project= 232 acres tributary to this LTF.

The LTF is to be constructed as a drive down ramp.

Alternatives to the Proposed LTF

Construct a road to Cedar Cove and construct a LTF there. 1/

Construct a road to Lisa NE and construct a LTF at that site. 1/

Evaluation Between Alternatives

Lisa Creek LTF

Tributary timber to this LTF would be from VCU 301 and would require approximately 2.3 miles of road reconstruction. The construction of two bridges both of these bridges would be at least 100 feet in length. Approximately 0.5 miles of this reconstruction is beach road and would require farther construction on the beach to avoid encroachment of Cultural sites identified along this route and the LTF area.

The road and LTF site both lie on state land selection and on native claimed land. It will be necessary to secure deeds of further assurance and/ or Rights-of-Way across these parcels of land. This applies to approximately 1.6 miles of the road to be reconstructed and the LTF and related facilities.

Nearest suitable area for a scale yard is 0.5 mile away to avoid the possible encroachment of any cultural sites this would be on selected land and a easement would be required.

Cedar Cove LTF Site

Would not encroach on cultural site area.

Would not require the two bridge crossings.

Would require construction of approximately one mile of road.

Road route crosses over unstable soils and through a slide area that would require special structures to be constructed to hold the road on the slope. To avoid crossing this slide area the route would have to encroach within one hundred and fifty (150') of a Eagle Nest Tree (ENT) U S Fish and Wildlife # E680 and have to be located on the beach fringe. The feasibility of this route needs to be confirmed by a soils scientist and/or a geotechnical engineer.

Cedar cove area is used for recreation and as a protected anchorage by many people.

This route is in state selected land and would require a right-of-way to be acquired from the state of Alaska for its entire length.

Lisa Creek NE LTF Site

Would require approximately one mile of new construct and approximately a 90 foot bridge.

Would require a R-O-W across a state land selection for about 0.25 miles.

Would be a drive down ramp LTF

Upland space is available for scaling and equipment maintenance shed.

Rock source available for construction of LTF and road within 500 feet of the LTF site.

(ii) the proposed discharge will result in significant degradation of the aquatic ecosystem.

A under water survey was not conducted on this site.

This site will adapt to the proposed drive down ramp which is planned for construction at this site.

Using the drive down ramp entry system the logs will be placed into the water via a stacker or loader and floated away by the tide. Entry velocity will be controlled to be less than 3 feet per second. This method will minimize the discharge of bark and surface run off into the Aquatic ecosystem.

Surface run off into the Aquatic ecosystem will be kept to a minimum by complying with BMPs using filter strips, road sloping, and periodic cleanup of bark and other wood debris. (40 CFR 122.27 Silvicultural Point Sources; applicable to State NPDES programs, see 40 CFR 123.25).

(iii) The proposed discharge does not include all appropriate and practicable measures to minimize potential harm to the Aquatic ecosystem.

This site will adapt to the proposed drive down ramp which is planned for construction at this site.

Using the drive down ramp entry system the logs will be placed into the water via a stacker or loader and floated away by the tide. Entry velocity will be controlled to be less than 3 feet per second. This method will minimize the discharge of bark and surface run off into the Aquatic ecosystem.

Surface run off into the Aquatic ecosystem will be kept to a minimum by complying with BMPs using filter strips, road sloping, and periodic cleanup of bark and other wood debris. (40 CFR 122.27 Silvicultural Point Sources; applicable to State NPDES programs, see 40 CFR 123.25).

Proposed LTF: Lisa Creek NE

Evaluation of Alternatives

(i) There is a practicable alternative to the proposed discharge that would have less adverse effect on the aquatic ecosystem, so long as such alternative does not have other significant adverse environmental consequences.

Description

Proposed acres of tentatively suitable to be harvested under the Northwest Baranof Project= 232 acres tributary to this LTF.

The LTF is to be constructed as a drive down ramp.

Alternatives to the Proposed LTF

Construct a road to Cedar Cove and construct a LTF there.1/

Reconstruct the road to the original Lisa creek LTF site and construct a drive down ramp.1/

Evaluation Between Alternatives

Lisa Creek NE LTF Site

Tributary timber to this LTF would be from VCU 301.

Would require approximately one mile of new construct and approximately a 90 foot bridge.

Would require a R-O-W across a state land selection for about 0.25 miles.

Would be a drive down ramp LTF

Upland space is available for scaling and equipment maintenance shed.

Rock source available for construction of LTF and road within 500 feet of the LTF site.

A underwater site survey and upland evaluation was done on this site in 1994. This site lend itself well to a not to exceed 12 percent shot rock ramp.

Bark deposits were found in the underwater surveys at a depths over 30 feet and are believed to be the result of the A-frame logging that took place in the area during the mid 1960s.

Lisa Creek LTF

Would require approximately 2.3 miles of road reconstruction. The construction of two bridges both of these bridges would be at least 100 feet in length. Approximately 0.5 miles of this reconstruction is beach road and would require farther construction on the beach to avoid encroachment of Cultural sites identified along this route and the LTF area.

The road and LTF site both lie on state land selection and on native claimed land. It will be necessary to secure deeds of futher assurance and/ or Rights-o-Way accross these parcels of land. This applies to approximately 1.6 miles of the road to be reconstructed and the LTF and related facilities.

Nearest suitable area for a scale yard is 0.5 mile away to avoid the possible encroachment of any cutural sites this would be on selected land and a easement would be required.

A underwater site survey was not conducted on this site.

Cedar Cove LTF Site

Would not encroach on cultural site area.

Would not require the two bridge crossings.

Would require construction of approximately one mile of new road.

Road route crosses over unstable soils and through a slide area that would require special structures to be constructed to hold the road on the slope. To avoid crossing this slide area the route would have to encroach within one hundred and fifty (150') of a Eagle Nest Tree (ENT) U S Fish and Wildlife # E680 and have to be located on the beach fringe. The feasibility of this route needs to be confirmed by a soils scientist and/or a geotechnical engineer.

Cedar cove area is used for recreation and as a protected anchorage by many people.

This route is in state selected land and would require a right-of-way to be acquired from the state of Alaska for its entire length.

No underwater survey was conducted in this area for a LTF.

(ii) The proposed discharge will result in significant degradation of the aquatic ecosystem.

Under water survey was conducted on this site.

This site will adapt to the proposed drive down ramp which is planned for construction at this site.

Using the drive down ramp entry system the logs will be placed into the water via a stacker or loader and floated away by the tide. Entry velocity will be controlled to be less than 3 feet per second. This method will minimize the discharge of bark and surface run off into the Aquatic ecosystem.

Surface run off into the Aquatic ecosystem will be kept to a minimum by complying with BMPs using filter strips, road sloping, and periodic cleanup of bark and other wood debris. (40 CFR 122.27 Silvicultural Point Sources; applicable to State NPDES programs, see 40 CFR 123.25).

(iii) The proposed discharge does not include all appropriate and practicable measures to minimize potential harm to the Aquatic ecosystem.

This site will adapt to the proposed drive down ramp which is planned for construction at this site.

Using the drive down ramp entry system the logs will be placed into the water via a stacker or loader and floated away by the tide. Entry velocity will be controlled to be less than 3 feet per second. This method will minimize the discharge of bark and surface run off into the Aquatic ecosystem.

Surface run off into the Aquatic ecosystem will be kept to a minimum by complying with BMPs using filter strips, road sloping, and periodic cleanup of

bark and other wood debris. (40 CFR 122.27 Silvicultural Point Sources; applicable to State NPDES programs, see 40 CFR 123.25).

Proposed LTF: Rodman NE

Evaluation of Alternatives

(i) There is a practicable alternative to the proposed discharge that would have less adverse effect on the aquatic ecosystem, so long as such alternative does not have other significant adverse environmental consequences.

Description

Proposed acres of tentatively suitable to be harvested under the Northwest Baranof Project= 364 acres tributary to this LTF.

The LTF is to be constructed as a drive down ramp.

Alternatives to the Proposed LTF

Construct and reconstruct road to Appleton Cove LTF.1/

Evaluation Between Alternatives

Rodman NE LTF Site

Would require approximately one thousand feet of new road construction.

Would be a drive down ramp LTF

Upland space is available for scaling and equipment maintenance shed.

A underwater site survey was completed by US F&W AND National Marine Fisheries in 1990 as part of the Kelp Bay Project Area Analysis.

Appleton Cove

Would require approximately 0.6 miles of new road reconstruction and Approximately 0.5 miles of reconstruction with a 80 foot bridge.

Appleton cove is an existing barge site under the Kelp Bay Project. A scalling yard is in place.

Haul to Appleton would be longer therefore more fuel will be used, more wear and tear on equipment.

(ii) The proposed discharge will result in significant degradation of the

aquatic ecosystem.

Under water survey was conducted on this site in 1990.

This site will adapt to the proposed drive down ramp which is planned for construction at this site.

Using the drive down ramp entry system the logs will be placed into the water via a stacker or loader and floated away by the tide. Entry velocity will be controlled to be less than 3 feet per second. This method will minimize the discharge of bark and surface run off into the Aquatic ecosystem.

Surface run off into the Aquatic ecosystem will be kept to a minimum by complying with BMPs using filter strips, road sloping, and periodic cleanup of bark and other wood debris. (40 CFR 122.27 Silvicultural Point Sources; applicable to State NPDES programs, see 40 CFR 123.25).

(iii) The proposed discharge does not include all appropriate and practicable measures to minimize potential harm to the Aquatic ecosystem.

This site will adapt to the proposed drive down ramp which is planned for construction at this site.

Using the drive down ramp entry system the logs will be placed into the water via a stacker or loader and floated away by the tide. Entry velocity will be controlled to be less than 3 feet per second. This method will minimize the discharge of bark and surface run off into the Aquatic ecosystem.

Surface run off into the Aquatic ecosystem will be kept to a minimum by complying with BMPs using filter strips, road sloping, and periodic cleanup of bark and other wood debris. (40 CFR 122.27 Silvicultural Point Sources; applicable to State NPDES programs, see 40 CFR 123.25).

Proposed LTF: St John Baptist Bay:

Evaluation of Alternatives

(i) There is a practicable alternative to the proposed discharge that would have less adverse effect on the aquatic ecosystem, so long as such alternative does not have other significant adverse environmental consequences.

Description

Proposed acres of tentatively suitable to be harvested under the Northwest Baranof Project= xxx acres tributary to this LTF.

The LTF is to be constructed as a Barge Facility .

Alternatives to the Proposed LTF

Construct a Barge Facility across the bay on the south side of St John Baptist

Bay

Reconstruct the existing road and construct xx miles of new road and a drive down ramp facility in Nakwasina Sound.1/

Evaluation Between Alternatives

St John Baptist Bay site:

Tributary timber to this LTF would be from VCUs 300 and 302 for this project. Timber from VCU 287 could be made available for this site in the future

This site was previously used as a A-Frame type LTF and is now being proposed as a barge site.

Underwater survey and a upland evaluation conducted in 1994 indicated this site was suited for a barge type LTF.

Rebuilding of the existing bulk head would be required.

Upland space is available for scaling and equipment maintenance shed.

Rock source available for construction of LTF and road within 500 feet of the LTF site.

St John Baptist South Site:

Would require approximately 0.5 miles of road construction to connect to main haul route.

This site would be a barge bulkhead facility.

Rock source can be developed adjacent to the site. TTRA buffer of the class I stream that is on two sides of the rock source. Care must be taken to maintain this buffer while developing and working in the rock pit.

A underwater site survey was not conducted on this site.

Log storage site and maintenance shop could be established in rock pit site after that has been developed.

Shore based camp would have to be upland of the class I stream to avoid encroachment of the minimum ttra buffer.

Nakwasina Passage Site:

This site will require approximately 2.0 miles of reconstructed and 1.2 miles of new construction of road.

A underwater survey and a upland evaluation were conducted on this site in 1994

Average haul distance would be increased to this site by approximately 2.5 miles thus be more expensive because of increased fuel consumption, travel

time, wear and tear on equipment and increased construction cost.

(ii) The proposed discharge will result in significant degradation of the aquatic ecosystem.

Proposed LTF at ST John Baptist

The introduction of bark into the aquatic ecosystem would be at a minimum as this is a barge site and the logs would be transported directly from the shore on to the barge by a loader, stacker or crane.

Surface run off into the Aquatic ecosystem will be kept to a minimum by complying with BMPs using filter strips, road sloping, and periodic cleanup of bark and other wood debris. (40 CFR 122.27 Silvicultural Point Sources; applicable to State NPDES programs, see 40 CFR 123.25).

See dive report in Appendix ___ of this document for bottom conditions found at this site.

(iii) The proposed discharge does not include all appropriate and practicable measures to minimize potential harm to the Aquatic ecosystem.

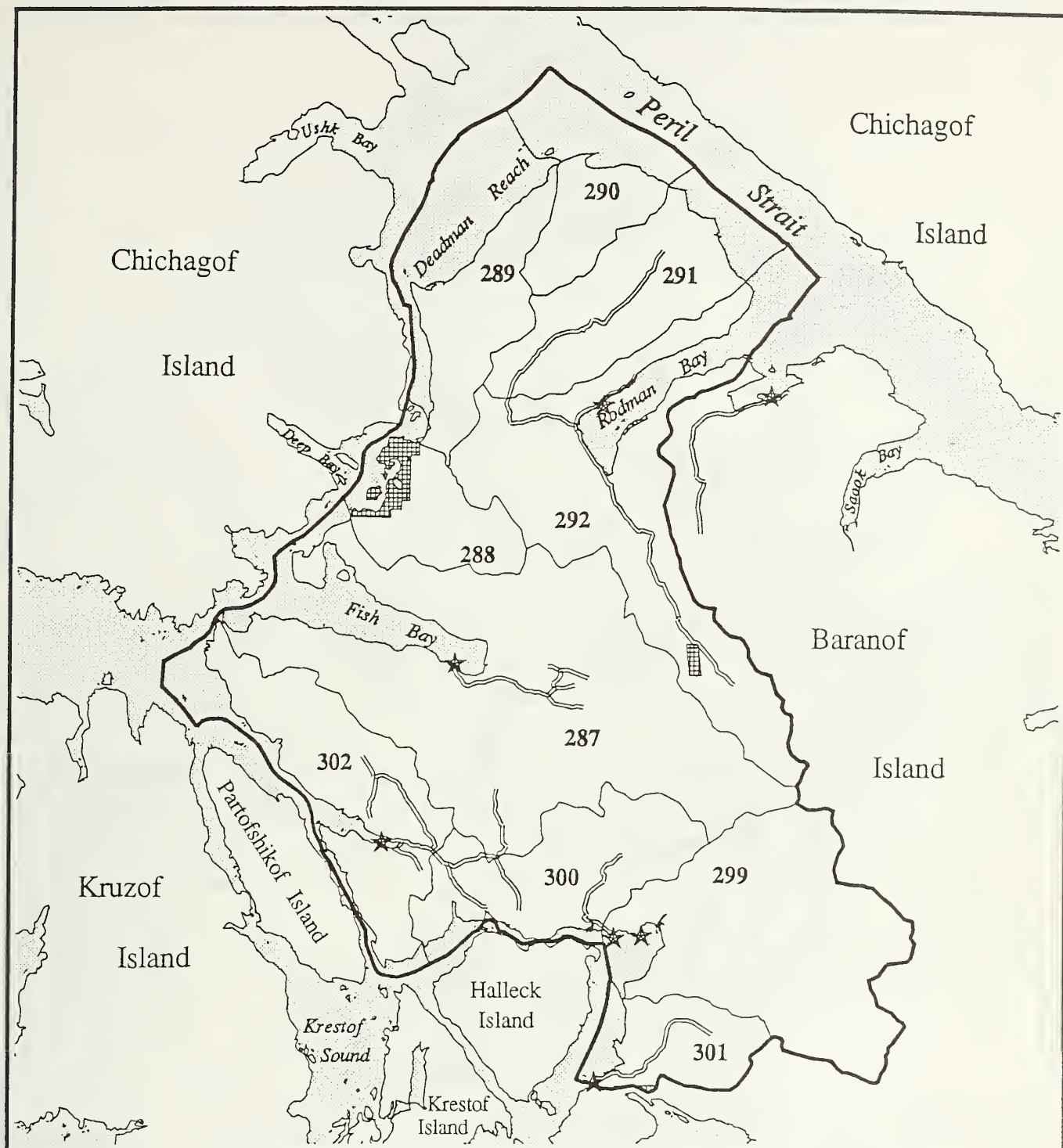
Surface run off into the Aquatic ecosystem will be kept to a minimum by complying with BMPs using filter strips, road sloping, and periodic cleanup of bark and other wood debris. (40 CFR 122.27 Silvicultural Point Sources; applicable to State NPDES programs, see 40 CFR 123.25).

Storage yard for the barge facility will be constructed following BMPs, Filterstrips, sloping to drain to filter strips. Weekly or more frequent bark and wood chunk cleanup and disposal will be required.

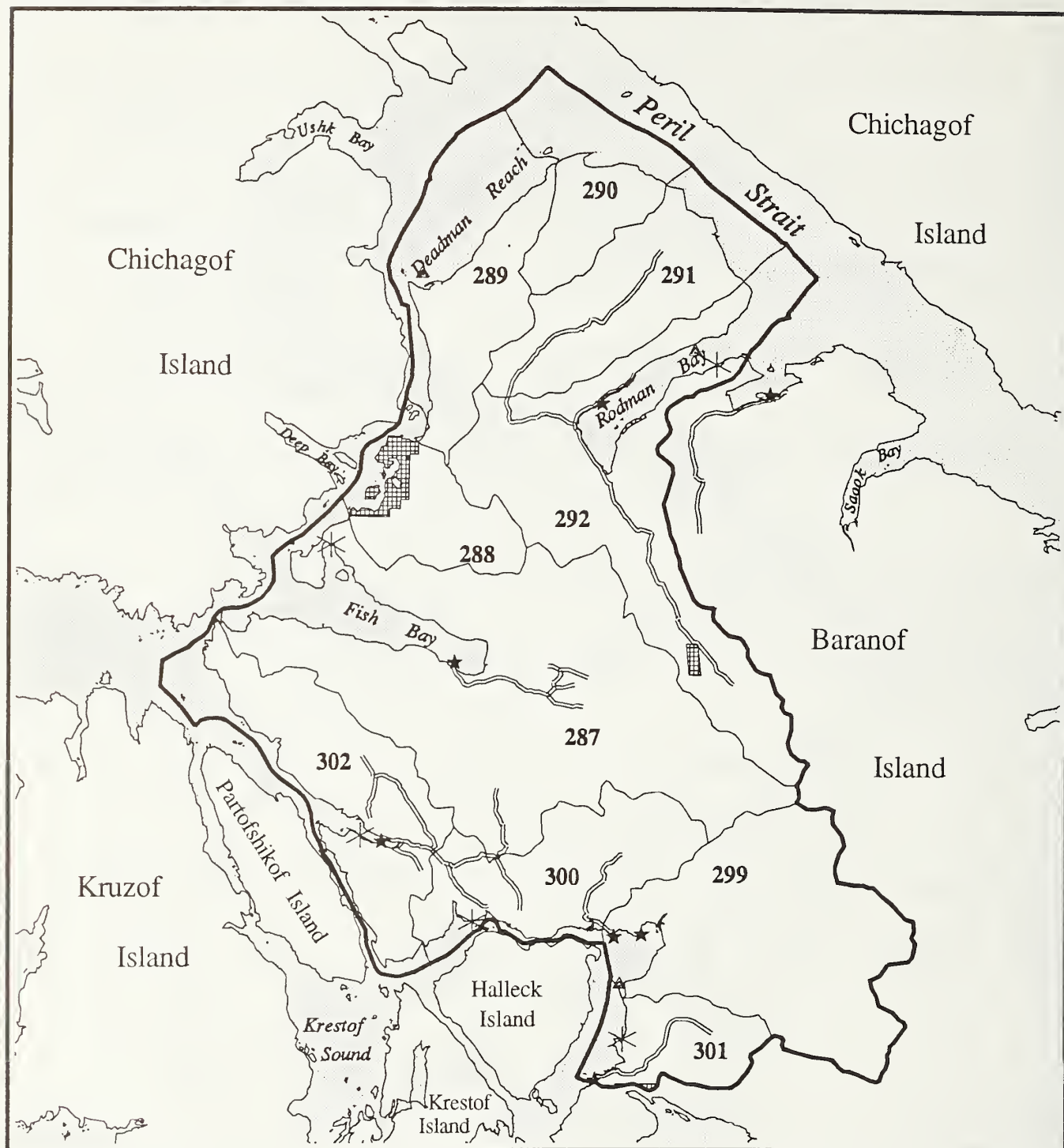
Barge facility will have very little bark being introduced during hauling and placement of logs onto the barge.







1. Area has been field reconned.

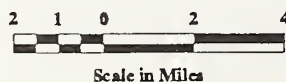
Previously Used LTF Sites



Proposed LTF and HILT Sites



-  VCU Boundaries
-  Existing Roads
-  Private Lands
-  Existing LTF Sites
-  Proposed LTF Sites
-  Proposed HILT Sites



A line drawing of a small boat, possibly a rowing boat or a small fishing boat, with a bundle of poles or logs tied to its side. The boat is shown from a side-on perspective, moving towards the right. The bundle of poles is secured with a rope or band. The background is simple, with some horizontal lines suggesting water or a distant shore.

LTF Siting Guidelines

1. Proximity to Rearing and Spawning Areas: Siting of log transfer and log raft storage facilities within 300 feet of the mouths of anadromous fish streams, or in areas known to be important for fish spawning or rearing, is normally prohibited.
2. Protected Locations: Log transfer and log raft storage facilities should be sited in weather-protected waters with bottoms suitable for anchoring and with at least 20 acres for temporary log storage and log booming.
3. Upland Facility Requirements: Log transfer facilities generally should be sited in proximity to at least 5 acres of relatively flat uplands. There should also be a body of water sufficient to provide a minimum of 60 lineal feet of facility face.
4. Safe Access to a Facility from the Uplands: To provide safe access to the log transfer facility and adjoining log sort yard, the facility should be sited where access roads to the facility can maintain a grade of 10 percent or less for trucks and 4 percent for specialized equipment.
5. Bark Dispersal: Log transfer facilities should be sited along or adjacent to straits and channels or deep bays where currents may be strong enough to disperse sunken or floating wood debris. Siting log transfer facilities in embayments with sills or other natural restrictions to tidal exchange should be avoided.
6. Site Productivity: Sites for in-water storage and/or transfer of logs should be located in areas having the least productive intertidal and subtidal zones.
7. Sensitive Habitat: Log transfer facilities and log raft storage areas should not be sited on or adjacent to (i.e., near enough to affect) extensive tideflats, salt marshes, kelp or eelgrass beds, seaweed harvest areas, or shellfish concentration areas.
8. Safe Marine Access to Facilities: Log rafting and storage facilities should be safely accessible to tug boats with log rafts at most tides and on most winter days.
9. Storage and Rafting: Logs, log bundles, and log rafts should be stored in areas where they will not ground at low tide. A minimum depth of 40 feet or deeper measured at mean lower low water (mllw) for log raft storage is preferred.
10. Avoid Bald Eagle Nest Trees: Site log transfer facilities to, avoid bald eagle nests. No project construction or operations should be closer than 330 feet to any bald eagle nest tree.

Comparison of Log Transfer Sites Based on LTF Guidelines Under 404(b)(1)											
VCU	LTF Name	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
287	Schulze Cove	+	+	+	+	-	+	+	+	+	+
292	Rodman	+	+	+	+	+	+	-	-	+	+
292	Rodman NE	+	+	+	-	+	+	+	-	+	+
293	Appleton	+	+	+	+	-	+	-	+	+	+
300	Noxon	+	+	+	+	+	+	+	+	+	+
300	Nakwasina Passage	+	+	+	-	+	+	+	+	+	+
301	Lisa Creek N	+	+	+	-	+	+	+	+	+	+
301	Lisa Creek	+	+	+	+	+	+	+	+	+	+
302	St. John Baptist	+	+	+	+	+	+	-	+	+	+
302	St. John Baptist S	+	+	+	-	+	+	+	+	+	+

+ Meets LTF Guidelines

- Does not meet LTF Guidelines

Appendix F

Recreation

Recreation

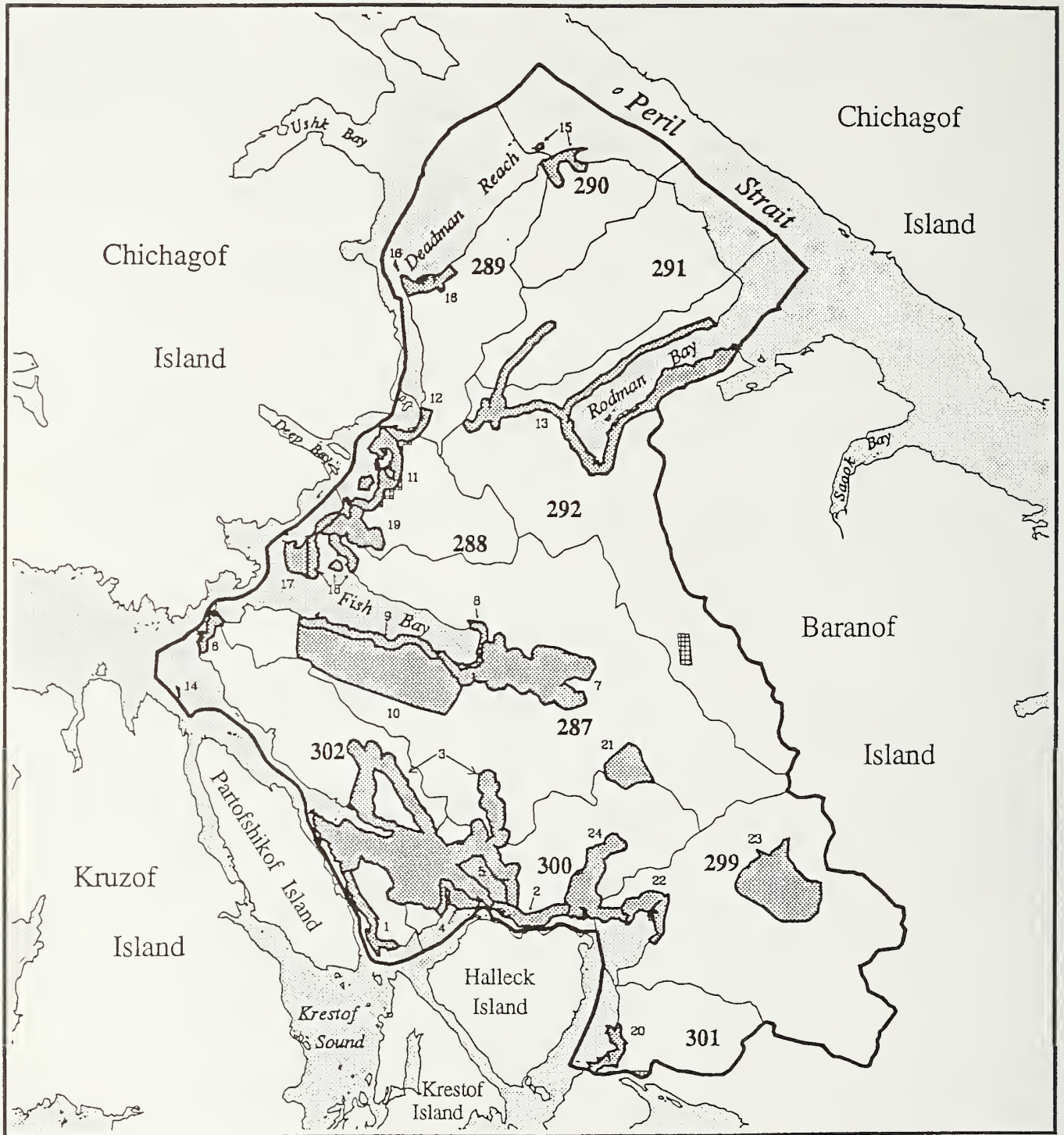
Within the Northwest Baranof Project Area there are 24 inventoried Recreation Places totaling 24,621 acres. A Recreation Place is an identified geographic area having one or more physical characteristics attractive to people engaging in recreational activities. These features may be beaches, streamside areas, road or trail corridors, or areas surrounding lakes, cabins, or anchorages. Each Recreation Place has one or more activities associated with it such as viewing scenery or wildlife, boating, hiking, fishing, dispersed camping, and hunting.




Thirteen Recreation Places are unaltered in all Alternatives. These Recreation Places are:

- Channel Rocks
- Haley Point Uplands
- Haley Anchorage/Haley Point
- Head of Fish Bay
- Fish Bay Road System
- Sinitsin Cove
- Range Creek Cove/Yellow point
- Pogibshi/Goose Cove
- Nismeni Cove
- Nakwasina Passage
- St. John Roads Uplands
- Hemorrhoid Lake
- Rosenberg Lake

Figures F-1 through F-5 illustrate the recreation place changes between alternatives.

Recreation Places Alternative 1



-  Private Lands
-  Recreation Places
-  VCU Boundaries

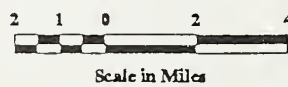


Table F-1

Alternative 1 - Recreation Places and Their Features

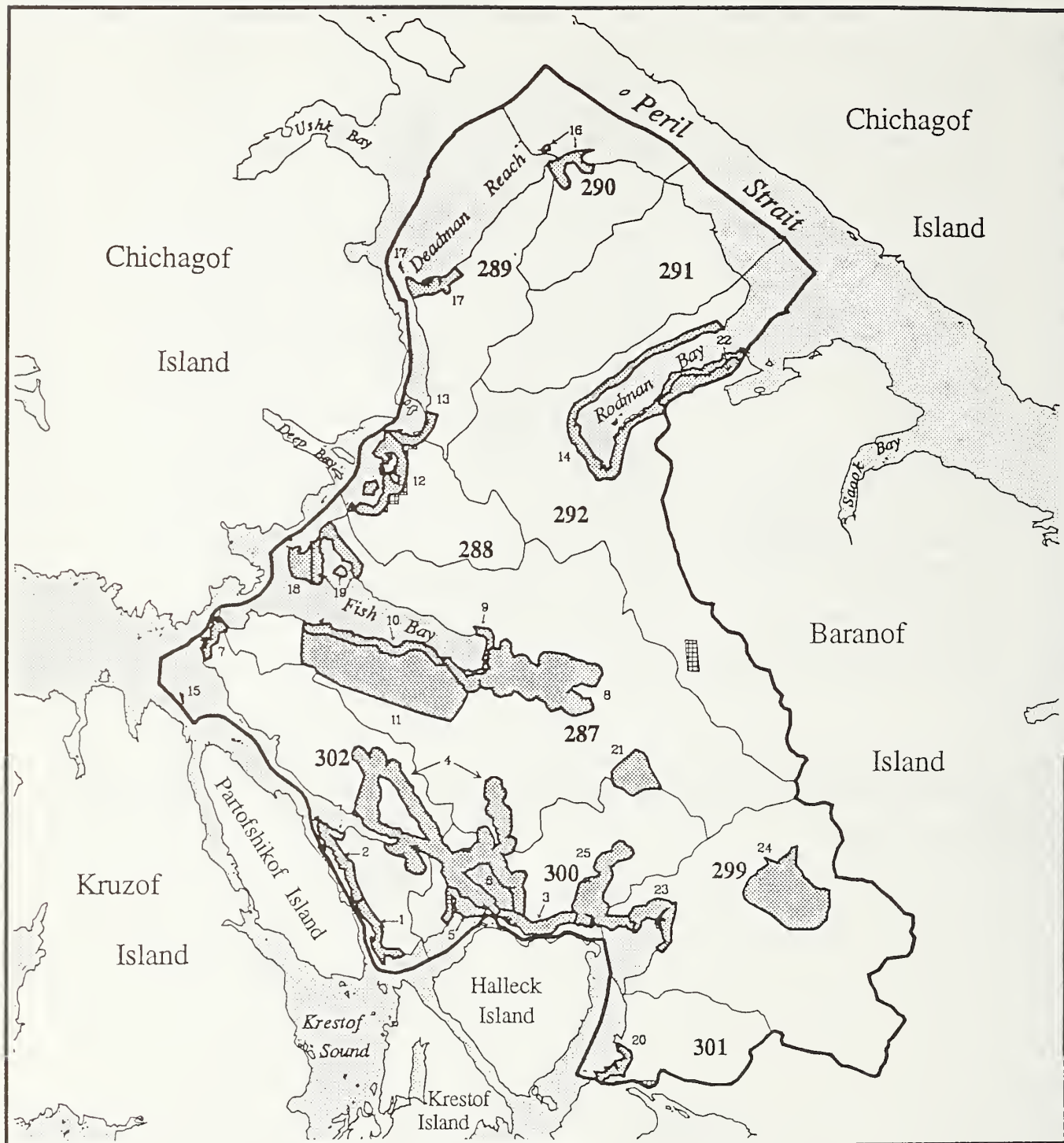
Map Number	Recreation Place	Features	Setting**	Acres
1.	Neva Strait*	Anchorage, High boat use*	N	478*
2.	Nakwasina Passage*	Big game and Waterfowl hunting*	N	501*
3.	St. John Baptist Bay Road System	ORV use, Hiking, Lake/stream fishing	M	7,172
4.	Nak.Passage/St. Johns Road	Shoreline, Big game hunting	N	346
5.	St. John Roads Uplands	Big game hunting	N	503
6.	Channel Rocks	Emergency shelter, Anchorage	N	200
7.	Fish Bay Road System	Dispersed camping, Hot Springs, ORV use	M	2,828
8.	Head of Fish Bay	Anchorage, Trail, Hiking, Estuary	N	211
9.	Haley Anchorage/Haley Point	Anchorage, Big game hunting	N	662
10.	Haley Point Uplands	Big game hunting	N	3,841
11.	Bear/Baby Bear Bay	Anchorage, Camping, Nature study	N	784
12.	Range Creek Cove/Yellow Point	Camping, Hiking, Boat access	N	270
13.	Rodman Bay	Anchorage, Cabin, Shoreline	M	3,524
14.	Sinitsin Cove*	Beach, picnicking*	N	2*
15.	Nismeni Cove	Hunting, Shelter, Cove	N	396
16.	Pogibshi/Goose Cove	Shoreline, Grass flats	N	375
17.	Launch Cove/Island Point	Anchorage, Hunting, Sergius Narrows	N	331
18.	Schulze Cove/Piper Island	Anchorage, Cabin	N	645
19.	Schulze Cove Road System	Hiking, Hunting	M	670
20.	Nakwasina Sound, East*	Dispersed camping, Shoreline, Hunting	M	331*
21.	Hemorrhoid Lake	Dispersed camping, Big game hunting	N	675
22.	Head of Nakwasina Sound	Waterfowl hunting, Dispersed camping	M	569
23.	Rosenberg Lake	Dispersed camping, Big game hunting	N	2,076
24.	Nakwasina Passage Road System	Big game hunting, Hiking	M	1,288
TOTAL				28,678




Source: Flynn, 1995 Note: This information derived from Chatham Area Geographic Information Systems (GIS).

*Recreation Place extends beyond the Project Area. Features and acres listed are only for that portion within the Project Area.

** N - natural, M - modified

Recreation Places Alternative 2



-  Private Lands
-  Recreation Places
-  VCU Boundaries

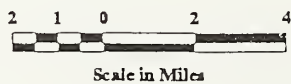


Table F-2

Alternative 2 - Recreation Places and Their Features

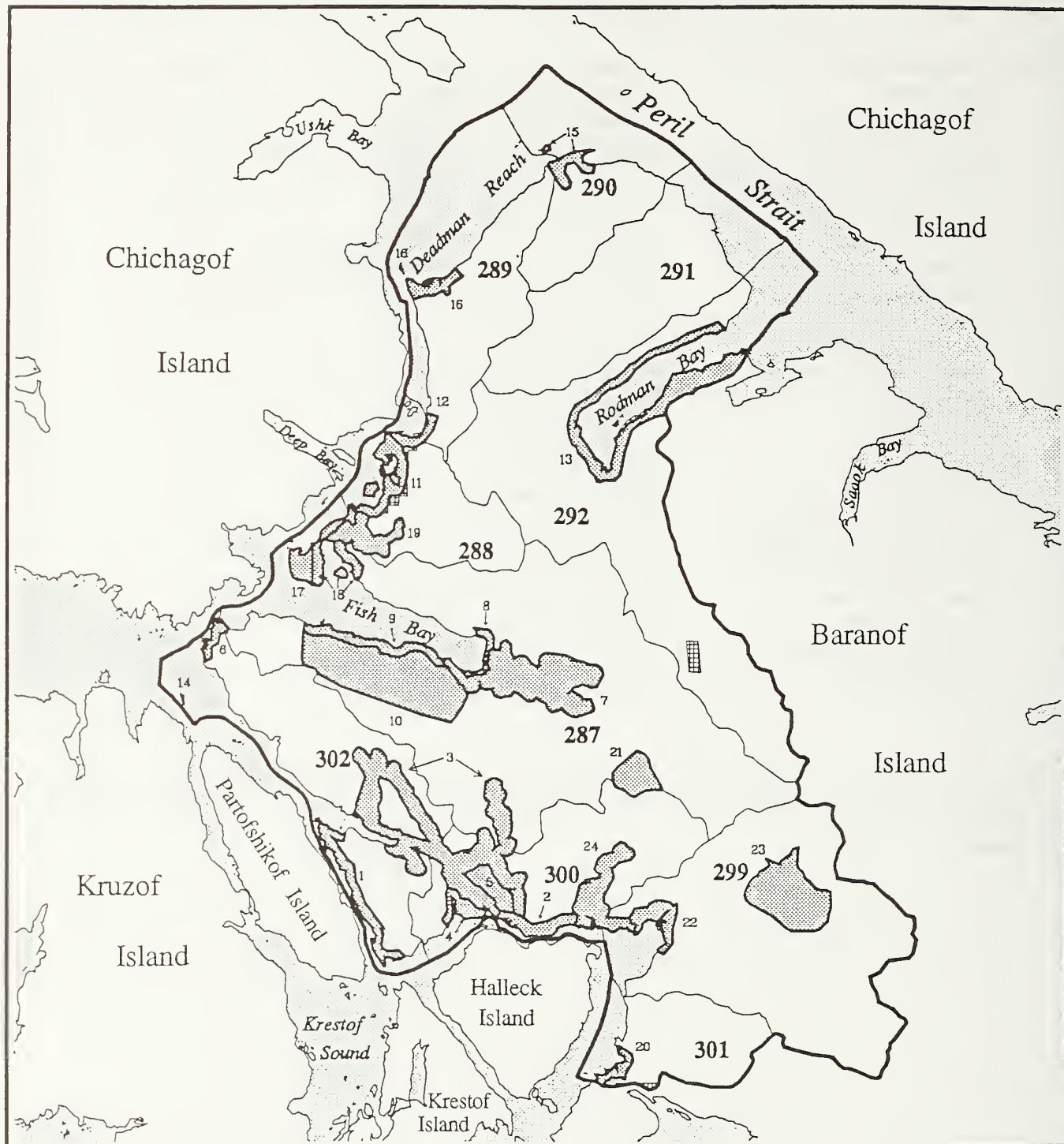
Map Number	Recreation Place	Features	Setting**	Acres
1.	Neva Strait*	Anchorage, High boat use*	N	370*
2.	N.E. Neva	Anchorage, High boat use	M	473
3.	Nakwasina Passage*	Big game and Waterfowl hunting*	N	501*
4.	St. John Baptist Bay Road System	ORV use, Hiking, Lake/stream fishing	M	4,720
5.	Nak.Passage/St. Johns Road	Shoreline, Big game hunting	N	346
6.	St. John Roads Uplands	Big game hunting	N	503
7.	Channel Rocks	Emergency shelter, Anchorage	N	200
8.	Fish Bay Road System	Dispersed camping, Hot Springs, ORV use	M	2,828
9.	Head of Fish Bay	Anchorage, Trail, Hiking, Estuary	N	211
10.	Haley Anchorage/Haley Point	Anchorage, Big game hunting	N	662
11.	Haley Point Uplands	Big game hunting	N	3,841
12.	Bear/Baby Bear Bay	Anchorage, Camping, Nature study	N	798
13.	Range Creek Cove/Yellow Point	Camping, Hiking, Boat access	N	270
14.	Rodman Bay	Anchorage, Cabin, Shoreline	M	1,862
15.	Sinitsin Cove*	Beach, picnicking*	N	2*
16.	Nismeni Cove	Hunting, Shelter, Cove	N	396
17.	Pogibshi/Goose Cove	Shoreline, Grass flats	N	375
18.	Launch Cove/Island Point	Anchorage, Hunting, Sergius Narrows	N	331
19.	Schulze Cove/Piper Island	Anchorage, Cabin	N	610
20.	Nakwasina Sound, East*	Dispersed camping, Shoreline, Hunting	M	250*
21.	Hemorrhoid Lake	Dispersed camping, Big game hunting	N	675
22.	Appleton Cove	Big game hunting	M	498
23.	Head of Nakwasina Sound	Waterfowl hunting, Dispersed camping	M	569
24.	Rosenberg Lake	Dispersed camping, Big game hunting	N	2,076
25.	Nakwasina Passage Road System	Big game hunting, Hiking	M	1,254
TOTAL				24,621

Source: Flynn, 1995 Note: This information derived from Chatham Area Geographic Information Systems (GIS).

*Recreation Place extends beyond the Project Area. Features and acres listed are only for that portion within the Project Area.

** N - natural, M - modified

Recreation Places Alternative 3






-  Private Lands
-  Recreation Places
-  VCU Boundaries



Table F-3

Alternative 3 - Recreation Places and Their Features

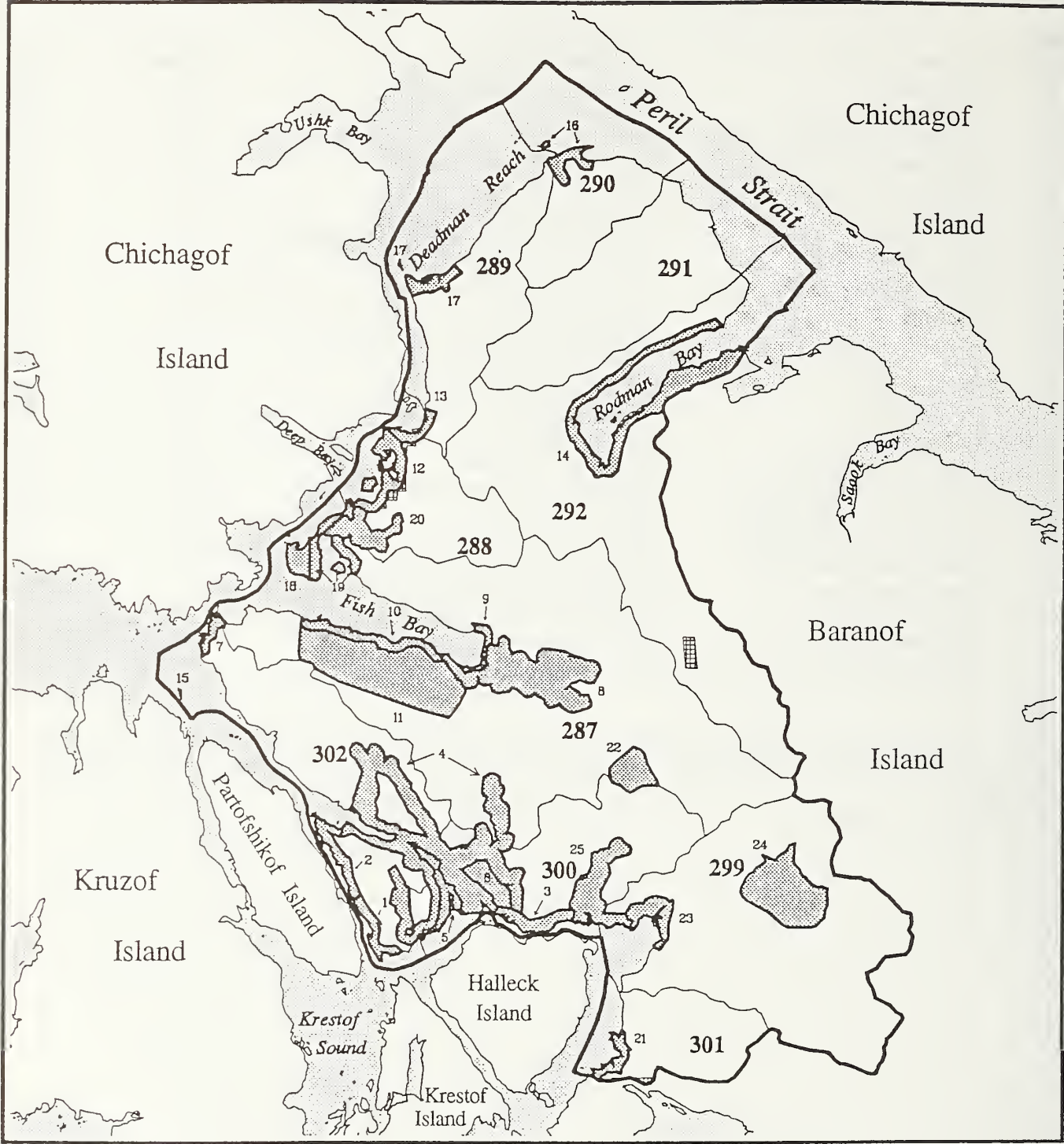
Map Number	Recreation Place	Features	Setting**	Acres
1.	Neva Strait*	Anchorage, High boat use*	N	843*
2.	Nakwasina Passage*	Big game and Waterfowl hunting*	N	501*
3.	St. John Baptist Bay Road System	ORV use, Hiking, Lake/stream fishing	M	4,720
4.	Nak.Passage/St. Johns Road	Shoreline, Big game hunting	N	346
5.	St. John Roads Uplands	Big game hunting	N	503
6.	Channel Rocks	Emergency shelter, Anchorage	N	200
7.	Fish Bay Road System	Dispersed camping, Hot Springs, ORV use	M	2,828
8.	Head of Fish Bay	Anchorage, Trail, Hiking, Estuary	N	211
9.	Haley Anchorage/Haley Point	Anchorage, Big game hunting	N	662
10.	Haley Point Uplands	Big game hunting	N	3,841
11.	Bear/Baby Bear Bay	Anchorage, Camping, Nature study	N	784
12.	Range Creek Cove/Yellow Point	Camping, Hiking, Boat access	N	270
13.	Rodman Bay	Anchorage, Cabin, Shoreline	M	2,370
14.	Sinitsin Cove*	Beach, picnicking*	N	2*
15.	Nismeni Cove	Hunting, Shelter, Cove	N	396
16.	Pogibshi/Goose Cove	Shoreline, Grass flats	N	375
17.	Launch Cove/Island Point	Anchorage, Hunting, Sergius Narrows	N	331
18.	Schulze Cove/Piper Island	Anchorage, Cabin	N	645
19.	Schulze Cove Road System	Hiking, Hunting, ORV	M	802
20.	Nakwasina Sound, East*	Dispersed camping, Shoreline, Hunting	M	250*
21.	Hemorrhoid Lake	Dispersed camping, Big game hunting	N	675
22.	Head of Nakwasina Sound	Waterfowl hunting, Dispersed camping	M	569
23.	Rosenberg Lake	Dispersed camping, Big game hunting	N	2,076
24.	Nakwasina Passage Road System	Big game hunting, Hiking	M	1,254
TOTAL				25,454

Source: Flynn, 1995 Note: This information derived from Chatham Area Geographic Information Systems (GIS).

*Recreation Place extends beyond the Project Area. Features and acres listed are only for that portion within the Project Area.

** N - natural, M - modified

Recreation Places Alternative 4



- Private Lands
- Recreation Places
- VCU Boundaries

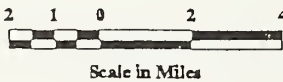


Table F-4

Alternative 4 - Recreation Places and Their Features

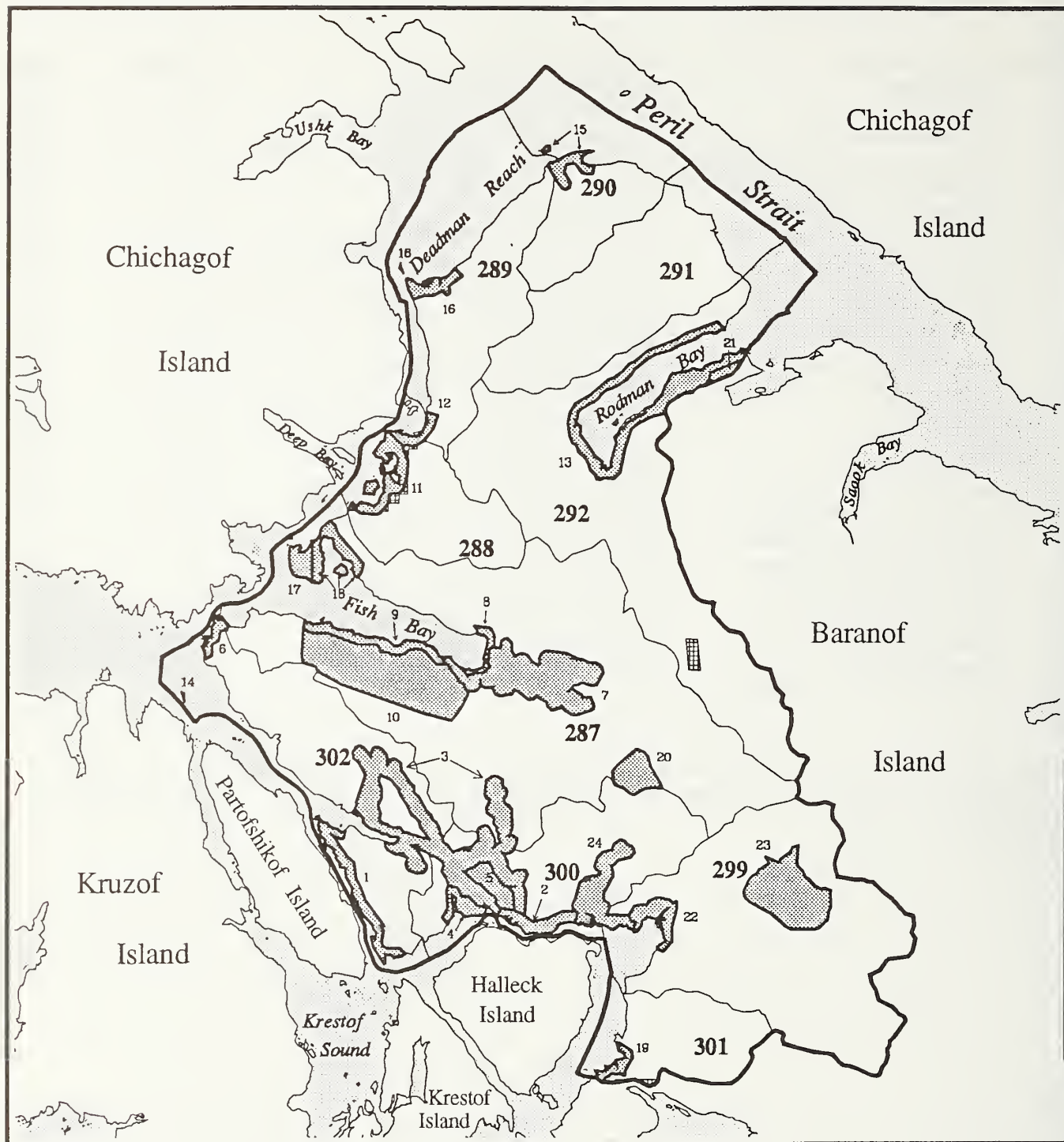
Map Number	Recreation Place	Features	Setting**	Acres
1.	Neva Strait*	Anchorage, High boat use*	N	370*
2.	N.E. Neva	Anchorage, High boat use	M	473
3.	Nakwasina Passage*	Big game and Waterfowl hunting*	N	501*
4.	St. John Baptist Bay Road System	ORV use, Hiking, Lake/stream fishing	M	5,963
5.	Nak.Passage/St. Johns Road	Shoreline, Big game hunting	N	508
6.	St. John Roads Uplands	Big game hunting	N	503
7.	Channel Rocks	Emergency shelter, Anchorage	N	200
8.	Fish Bay Road System	Dispersed camping, Hot Springs, ORV use	M	2,828
9.	Head of Fish Bay	Anchorage, Trail, Hiking, Estuary	N	211
10.	Haley Anchorage/Haley Point	Anchorage, Big game hunting	N	662
11.	Haley Point Uplands	Big game hunting	N	3,841
12.	Bear/Baby Bear Bay	Anchorage, Camping, Nature study	N	784
13.	Range Creek Cove/Yellow Point	Camping, Hiking, Boat access	N	270
14.	Rodman Bay	Anchorage, Cabin, Shoreline	M	2,370
15.	Sinitsin Cove*	Beach, picnicking*	N	2*
16.	Nismeni Cove	Hunting, Shelter, Cove	N	396
17.	Pogibshi/Goose Cove	Shoreline, Grass flats	N	375
18.	Launch Cove/Island Point	Anchorage, Hunting, Sergius Narrows	N	331
19.	Schulze Cove/Piper Island	Anchorage, Cabin	N	645
20.	Schulze Cove Road System	Hiking, Hunting, ORV	M	802
21.	Nakwasina Sound, East*	Dispersed camping, Shoreline, Hunting	M	331*
22.	Hemorrhoid Lake	Dispersed camping, Big game hunting	N	675
23.	Head of Nakwasina Sound	Waterfowl hunting, Dispersed camping	M	567
24.	Rosenberg Lake	Dispersed camping, Big game hunting	N	2,076
25.	Nakwasina Passage Road System	Big game hunting, Hiking	M	1,288
				TOTAL 26,972

Source: Flynn, 1995 Note: This information derived from Chatham Area Geographic Information Systems (GIS).

*Recreation Place extends beyond the Project Area. Features and acres listed are only for that portion within the Project Area.

** N - natural, M - modified

Existing Recreation Places






-  Private Lands
-  Recreation Places
-  VCU Boundaries



Table F-5

Alternative (Existing Condition) - Recreation Places and Their Features

Map Number	Recreation Place	Features	Setting**	Acres
1.	Neva Strait*	Anchorage, High boat use*	N	843*
2.	Nakwasina Passage*	Big game and Waterfowl hunting*	N	501*
3.	St. John Baptist Bay Road System	ORV use, Hiking, Lake/stream fishing	M	4,720
4.	Nak.Passage/St. Johns Road	Shoreline, Big game hunting	N	346
5.	St. John Roads Uplands	Big game hunting	N	503
6.	Channel Rocks	Emergency shelter, Anchorage	N	200
7.	Fish Bay Road System	Dispersed camping, Hot Springs, ORV use	M	2,828
8.	Head of Fish Bay	Anchorage, Trail, Hiking, Estuary	N	211
9.	Haley Anchorage/Haley Point	Anchorage, Big game hunting	N	662
10.	Haley Point Uplands	Big game hunting	N	3,841
11.	Bear/Baby Bear Bay	Anchorage, Camping, Nature study	N	798
12.	Range Creek Cove/Yellow Point	Camping, Hiking, Boat access	N	270
13.	Rodman Bay	Anchorage, Cabin, Shoreline	M	2,215
14.	Sinitsin Cove*	Beach, picnicking*	N	2*
15.	Nismeni Cove	Hunting, Shelter, Cove	N	396
16.	Pogibshi/Goose Cove	Shoreline, Grass flats	N	375
17.	Launch Cove/Island Point	Anchorage, Hunting, Sergius Narrows	N	331
18.	Schulze Cove/Piper Island	Anchorage, Cabin	N	610
19.	Nakwasina Sound, East*	Dispersed camping, Shoreline, Hunting	M	250*
20.	Hemorrhoid Lake	Dispersed camping, Big game hunting	N	675
21.	Appleton Cove*	Big game hunting*	M	145*
22.	Head of Nakwasina Sound	Waterfowl hunting, Dispersed camping	M	569
23.	Rosenberg Lake	Dispersed camping, Big game hunting	N	2,076
24.	Nakwasina Passage Road System	Big game hunting, Hiking	M	1,254
TOTAL				24,621

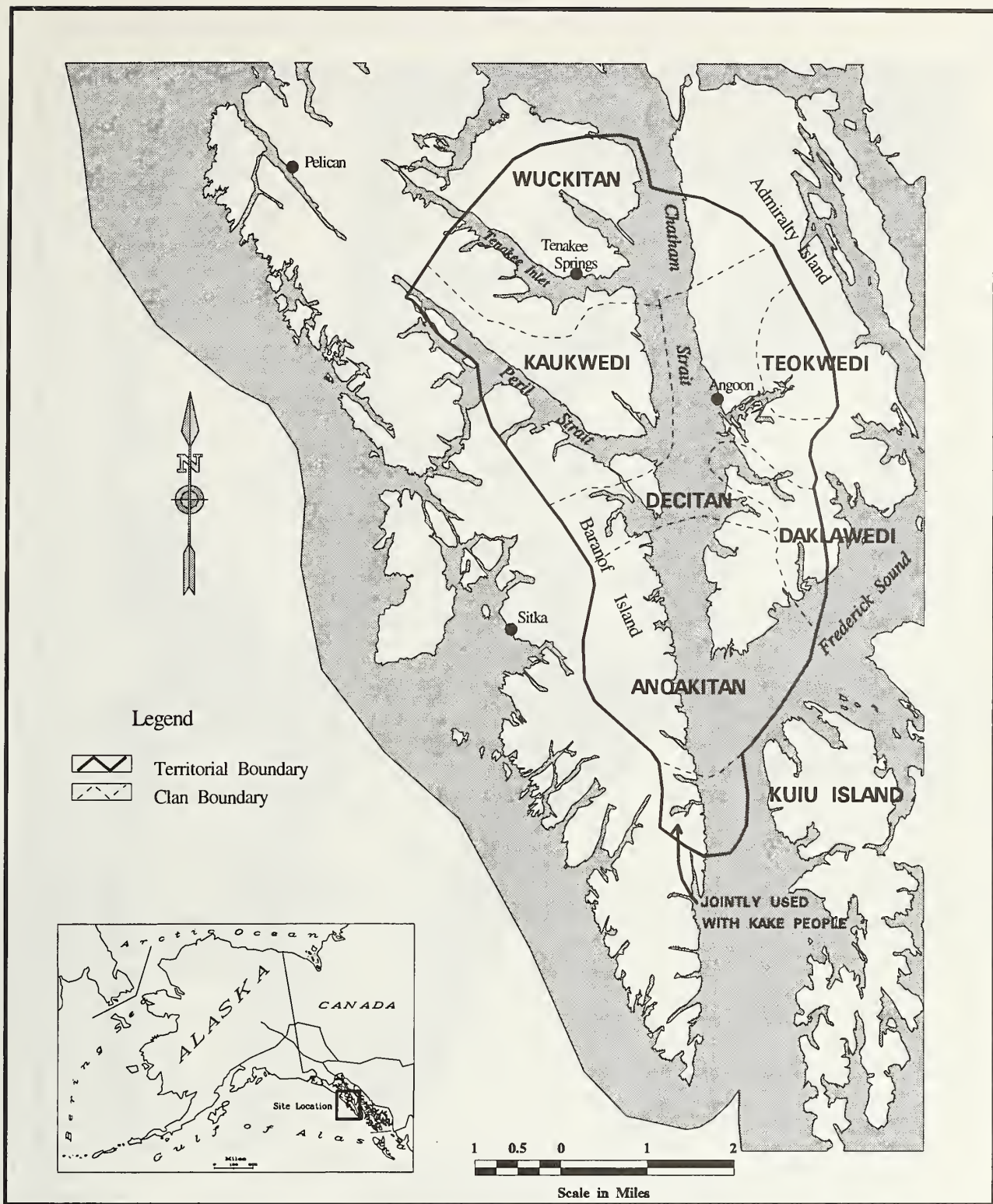
Source: Flynn, 1995 Note: This information derived from Chatham Area Geographic Information Systems (GIS).

*Recreation Place extends beyond the Project Area. Features and acres listed are only for that portion within the Project Area.

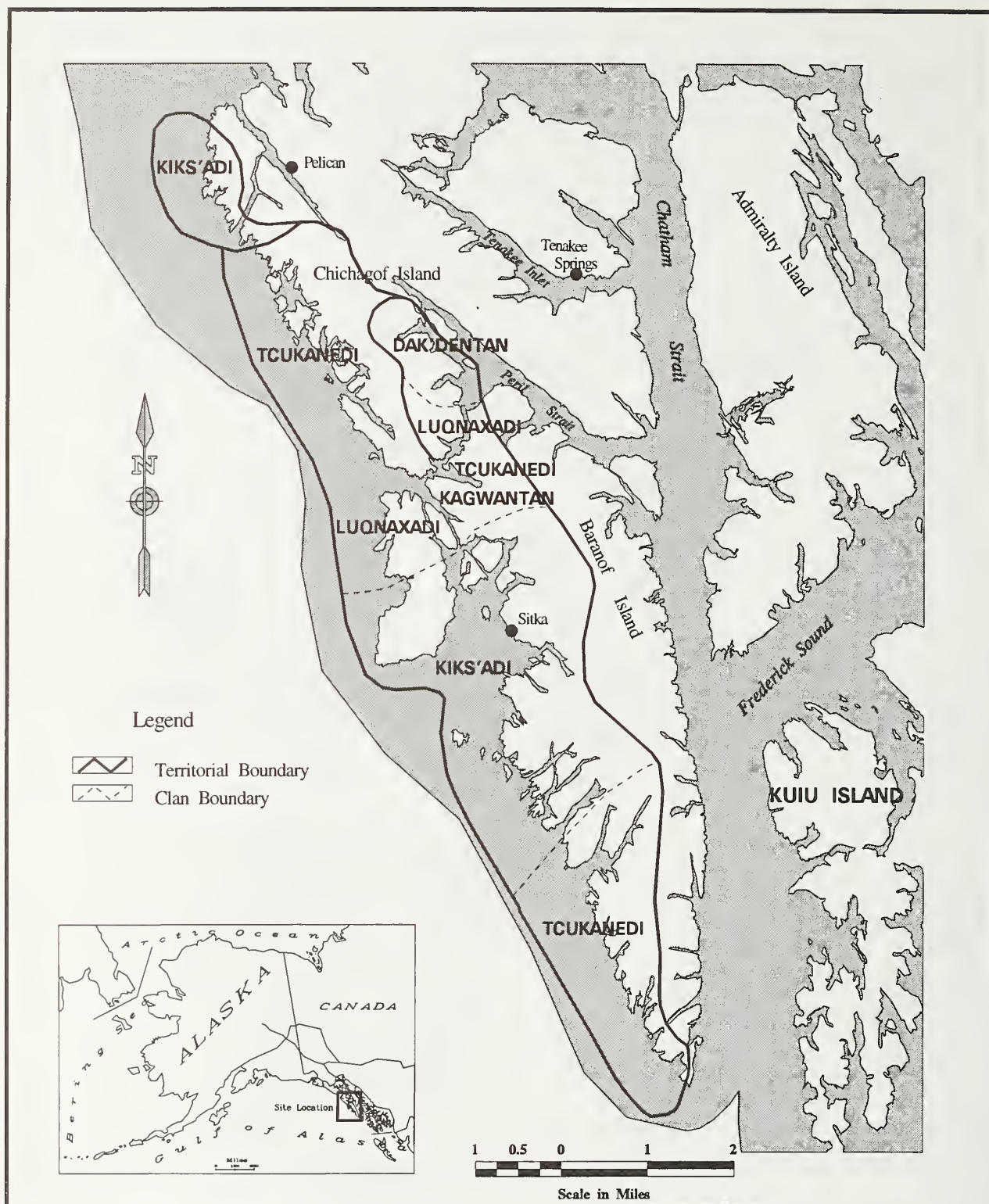
** N - natural, M - modified

Appendix G

Subsistence



HISTORICAL CLAN HUNTING BOUNDARIES OF ANGOON TLINGITS



HISTORICAL CLAN HUNTING BOUNDARIES OF SITKA TLINGITS

Angoon's Subsistence Use of the Project Area

Angoon, the only community on Admiralty Island, is located at the mouth of Kootznahoo Inlet. Angoon is approximately 31 nautical miles east of the Project Area across Chatham Strait. The 1990 population was reported as 638. Eighty-two percent of the population is Native. Per capita income for residents of Angoon in 1987 was reported as \$5,364. The 1990 median household income was \$32,083 (ADF&G, 1992). Angoon began as a winter village for the Tlingit Indians and remains a traditional Tlingit Indian village. George and Bosworth, 1988, describe Angoon as one of the most traditional Tlingit Indian villages in Southeast Alaska.

A study of deer hunting by the community of Angoon (George and Kookesh, 1983) indicates that Admiralty Island was the preferred place to hunt because of deer abundance, less competition from other hunters, proximity, knowledge of the area, and beaches suitable for boat landing. Peril Strait was reportedly not hunted by some hunters because of the presence of nonlocal hunters, logging activities, and lack of deer. Angoon hunters also heavily rely on Hood and Chaik Bays, Whitewater Bay and Wilson Cove, Kook Lake, Lake Eva, and Hanus Bay.

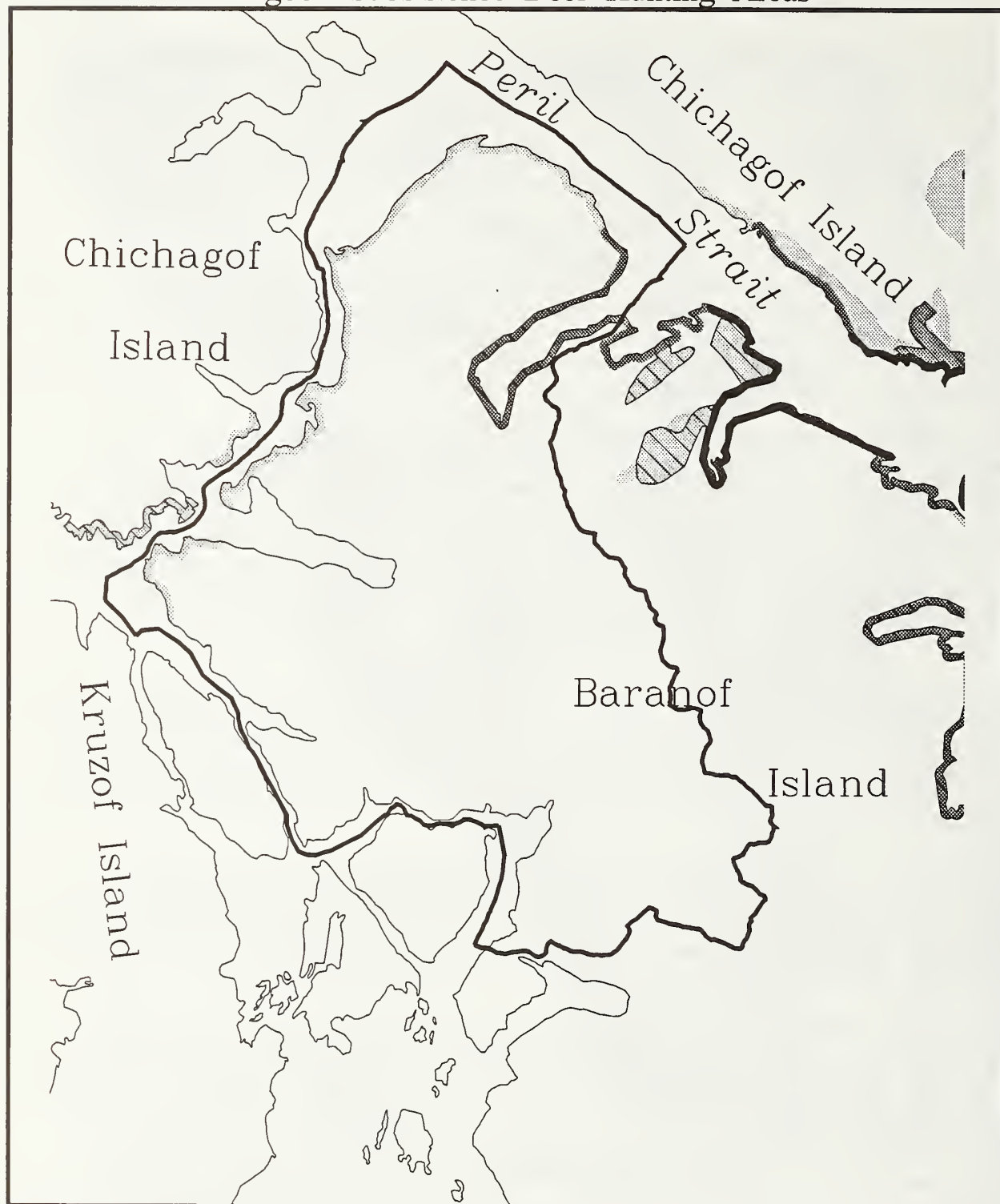
Goldschmidt and Haas (1946) reported that the Angoon Tlingit traveled farther in pursuit of deer than any other resource. Hunting undertaken in areas more distant was often done in conjunction with commercial fishing activities in the past. Some of these are now considered too remote or too costly to access for deer hunting only. George and Bosworth (1988:84) found that 81 percent of Angoon deer hunters accessed their hunting areas by open skiff, while 16 percent used larger vessels. Most deer are taken later in the hunting season after cold weather and snow at high elevations forces deer down to lowland locations. Logging road construction on southeast Chichagof Island generally has not led to the use of the roads for hunting by Angoon residents. Angoon residents generally have not used road systems for deer hunting and often avoid roaded areas because of competition.

The Angoon Subsistence Deer Hunting Areas map displays TRUCS data showing percentage of Angoon households reporting ever hunting deer in the Project Area during the time they lived in the community. In addition, areas that are the most reliable and most often used for deer hunting are identified. The shoreline of Rodman Bay was used by 6 to 15 percent of Angoon's households and depicted as a most reliable most often used area. The shoreline from Rodman Bay through Peril Strait is used by 1-5 percent of households for deer hunting.







Alaska Department of Fish & Game (ADF&G) hunter survey data indicates that Angoon residents harvested a mean of 3 percent of their total deer harvest from the Project Area during the period 1987 - 1992. Harvest occurred in three of those six years. Annual harvest ranged from 0 to 4 percent during that period of time. On average, Angoon's harvest accounts for less than one percent of the harvest from Project Area WAAs. Angoon's harvest took place in WAAs 3001 and 3315.

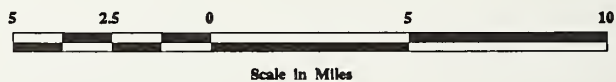
Note that the harvest reported to ADF&G on the deer hunter surveys for Angoon is known to be significantly less than the actual harvest. Face-to-face interviews conducted in Angoon in the spring of 1993 reported a deer harvest of 506 deer from the 69 people interviewed (Schroeder 1994). ADF&G's 1992 Deer Hunter Survey Summary Statistics report 251 deer harvested in Angoon in 1992. The face to face interviews report a deer harvest of twice what was reported in the Wildlife Conservation Division's Hunter Survey Summary Statistics. Hunters reported harvesting a mean 5.7 deer (2.7 bucks and 2.6 does). They also reported giving away a mean 2.2 deer, receiving a mean 0.5 deer, and hunting on average 9.9 days. The month of December had the highest frequency of harvest activity followed by November, October, August, September, and least frequent was harvest in January. Other findings from the face-to-face interviews include only one deer reported harvested from a Project Area WAA, WAA 3313.

Angoon Subsistence Deer Hunting Areas



Plotting Date October 06, 1994

-  1 to 5 Percent of households
-  6 to 15 Percent of households
-  16 to 25 Percent of households
-  Greater than 25 percent of households
-  Most reliable, most often used areas
-  Project Boundary



Source: TRUCS, 1988; GIS

Sitka's Subsistence Use of the Project Area

Sitka is located in northern southeast Alaska on the west side of Baranof Island just a few miles from the Project Area. The 1990 Sitka borough population was reported as 8,588. Twenty-one percent of the population is Native. Per capita income of Sitka residents in 1987 was reported as \$14,572. The 1990 median household income was \$43,337 (ADF&G 1992). Sitka is the third largest community in southeastern Alaska.

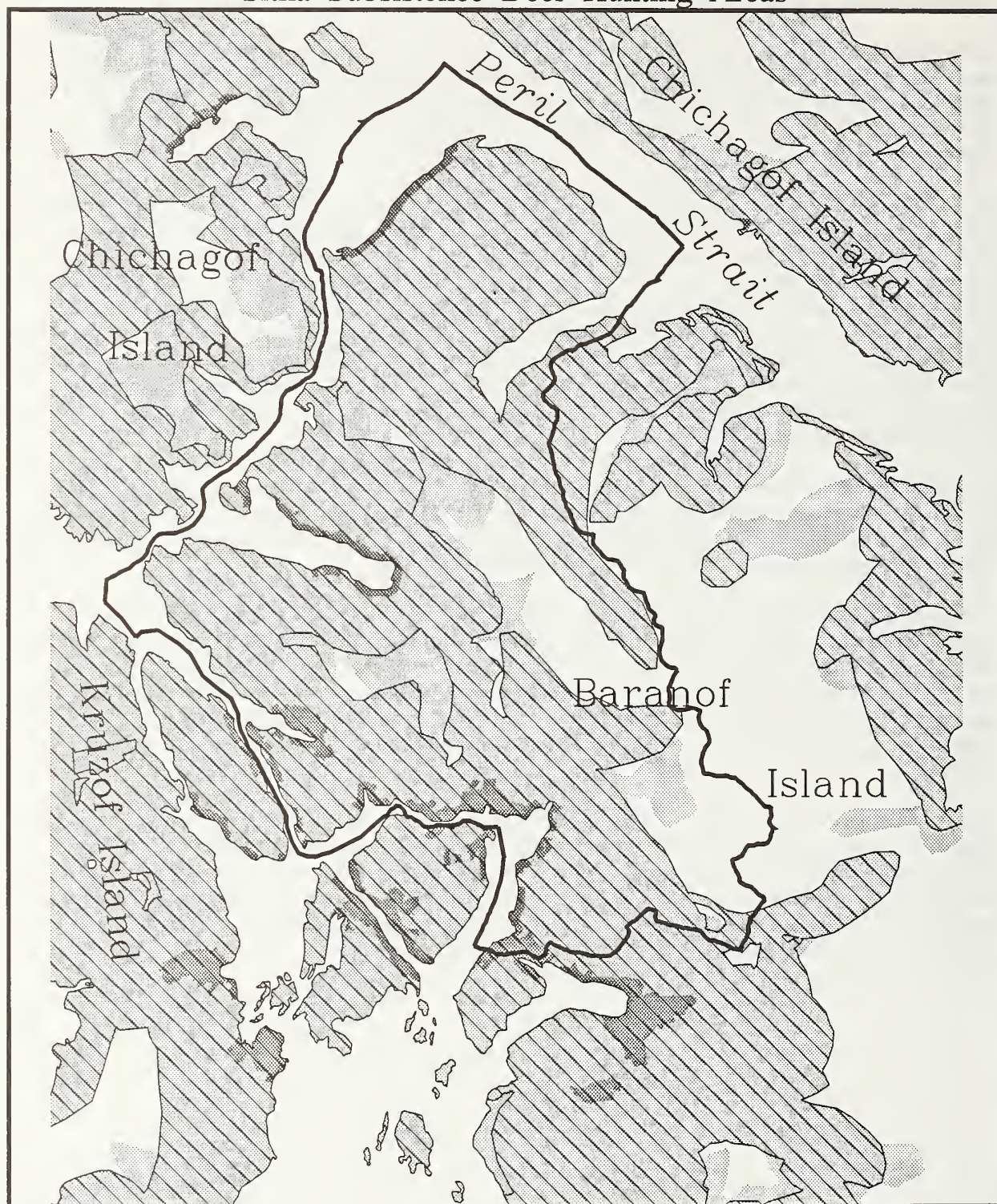
The TRUCS collected data in 1988 for the year 1987. In Sitka the survey sample of 296 stratified random households was selected from the population of 2,871 identified households in 1988. Data were expanded in order to estimate community harvest levels and participation. The percentage of Sitka households reporting harvesting wild resources was 88.5. Mean household harvest was approximately 411 pounds. Chinook, coho, and sockeye salmon, halibut, rockfish, trout and char, deer, Dungeness and king crab, clams and cockles, and berries were the primary resources harvested within each major category, in terms of quantity of harvest. Harvested resources also included other salmon species, cod, flounder, eulachon, herring, herring roe, moose, black bear, goat, seal, furbearers, upland birds, waterfowl, abalone, tanner crab, clams and cockles, scallops, chitons, octopus, sea cucumber, sea urchin, various plants, wood, and seaweed (Betts et. al. 1993).

In 1987, the annual harvest of subsistence resources was 139 lbs. per capita. This amounted to 38 lbs. of deer; 2 lbs. of other mammals; 38 lbs. of salmon; 56 lbs. of finfish and shellfish; and 5 lbs. of other resources. The average Sitka household derived 15 percent of its meat and fish from subsistence activities in 1987. Deer comprised 27 percent of the subsistence harvest in 1987.

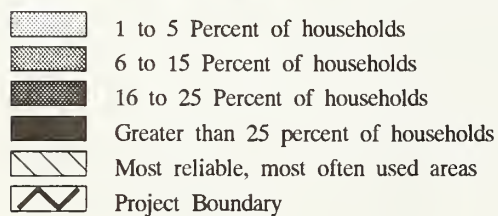
The Sitka Subsistence Deer Hunting Areas map displays TRUCS data showing percentage of Sitka households reporting ever hunting deer in the Project Area during the time they lived in the community. In addition, areas that are the most reliable and most often used for deer hunting are identified. Nearly all of Project Area was identified as areas used for hunting by Sitka residents and areas most reliable or areas used most often for hunting deer. Some areas are more heavily used than other areas, these include: Katlian drainage, Nakwasina Passage, St. John Baptist Bay, Fish Bay shoreline, and Deadman Reach shoreline.

Alaska Department of Fish & Game (ADF&G) hunter survey data indicates that Sitka residents harvested a mean of 38 percent of their total deer harvest from the Project Area during the period 1987 - 1992. Harvest occurred in all of those six years. Annual harvest ranged from 34 to 43 percent of Sitka's harvest during that period of time. On average, Sitka's harvest accounts for 90 percent of the harvest from Project Area WAAs. WAAs 3001 and 3002 which are closest to Sitka get the most harvest. WAAs 3312, 3313, and 3314 get about one third of the harvest of 3001 and 3002.

Sitka Subsistence Deer Hunting Areas

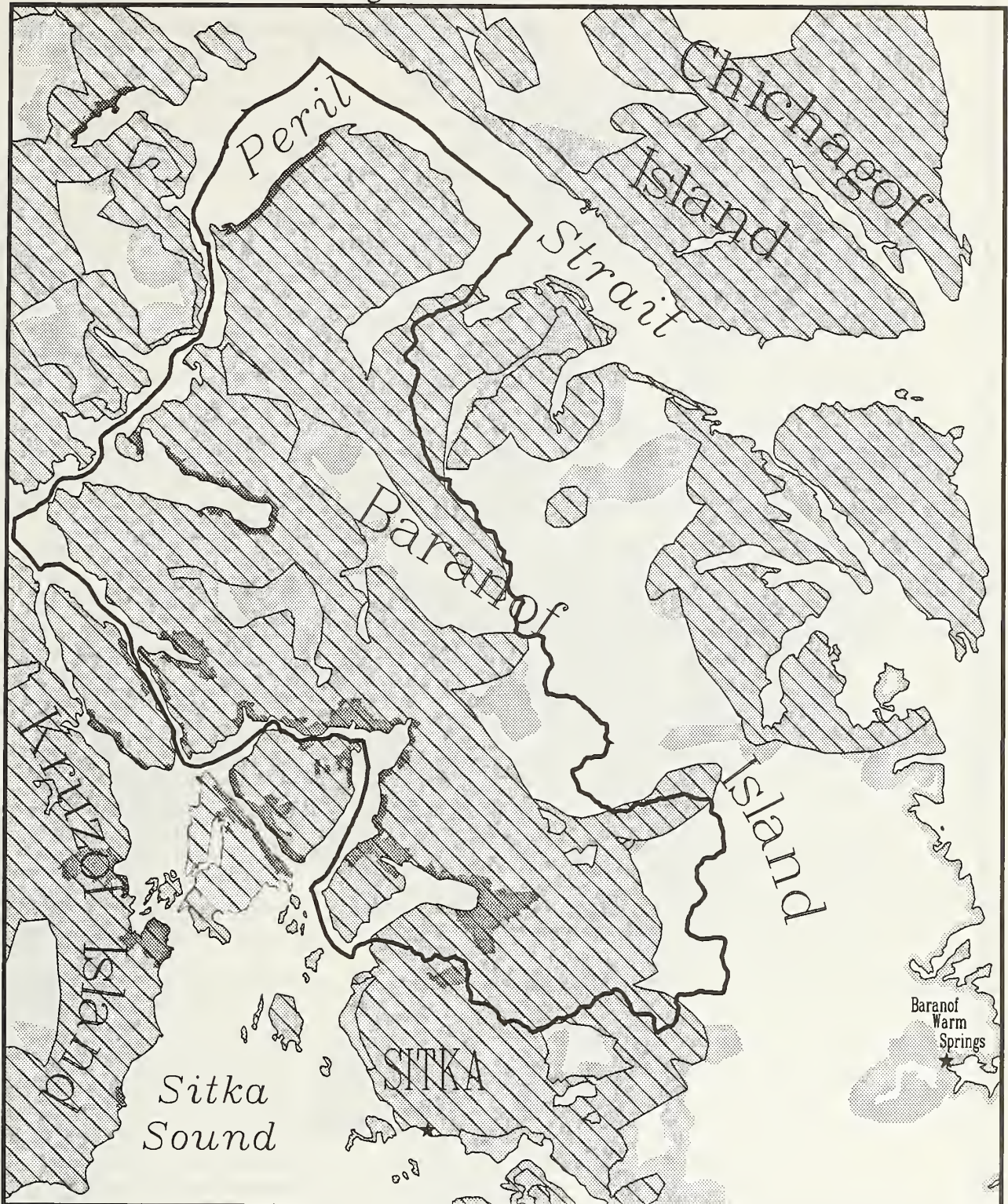







Plotting Date October 06, 1994



Source: TRUCS, 1988; GIS

Northwest Baranof Regional Subsistence Deer Harvest



-  1 to 5 Percent of households
-  6 to 15 Percent of households
-  16 to 25 Percent of households
-  Greater than 25 percent of households
-  Most reliable, most often used areas

 Project Boundary

0 5 10 Miles

Plotting Date April 12, 1994

G-7








Figure
Subsistence Harvest as a Percentage of the Total Deer Harvest

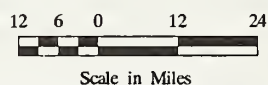
This map displays deer harvest based on Alaska Department and Game (ADF&G) deer hunter surveys by Wildlife Analysis (VAA), for the years 1987 - 1992. Subsistence harvest refers taken by hunters from rural communities in Southeast Alaska. ADF&G Div. of Subsistence, Tongass National Forest, Chatham

The map shows the state of Alaska with a focus on Southeast Alaska, where numerous VAA (Village and Area) regions are delineated. Each region is labeled with a number representing the total deer harvest. The regions are shaded according to the percentage of subsistence harvest relative to the total harvest, as indicated by the legend:

- Subsistence Harvest less than or equal to 10% of Total Harvest (White)
- Subsistence Harvest greater than 10% but less than or equal to 50% of Total Harvest (Light Gray)
- Subsistence Harvest greater than 50% but less than or equal to 60% of Total Harvest (Dark Gray)
- Subsistence Harvest greater than 60% but less than or equal to 70% of Total Harvest (Horizontal Lines)
- Subsistence Harvest greater than 70% but less than or equal to 80% of Total Harvest (Vertical Lines)
- Subsistence Harvest greater than 80% but less than or equal to 90% of Total Harvest (Diagonal Lines)
- Subsistence Harvest greater than 90% of Total Harvest (Cross-hatch)

Key regions and their harvest numbers include: 4407, 4408, 2202, 2203, 2304, 2305, 2306, 4256, 4222, 4252, 3421, 3418, 3419, 3630, 3523, 3524, 3551, 3629, 3627, 3310, 3309, 3308, 3416, 3311, 3312, 3313, 3315, 3104, 3105, 3001, 3002, 3003, 3206, 3207, 3733, 3734, 4044, 4054, 4043, 4042, 4041, 4033, 3939, 5946, 2516, 2515, 2514, 2411, 2412, 2413, 2518, 2519, 2574, 2722, 3837, 4145, 2823, 2824, 2825, 2926, 2927, 604.

	Subsistence Harvest less than or equal to 10% of Total Harvest
	Subsistence Harvest greater than 10% but less than or equal to 50% of Total Harvest
	Subsistence Harvest greater than 50% but less than or equal to 60% of Total Harvest
	Subsistence Harvest greater than 60% but less than or equal to 70% of Total Harvest
	Subsistence Harvest greater than 70% but less than or equal to 80% of Total Harvest
	Subsistence Harvest greater than 80% but less than or equal to 90% of Total Harvest
	Subsistence Harvest greater than 90% of Total Harvest



Summary

The communities of Angoon, Haines, Hidden Falls, Hoonah, Juneau, Kake, Ketchikan, Pelican, Petersburg, Port Alexander, Port Protection, Sitka, Skagway, Tenakee Springs, Thoms Place, Thorne Bay, and Wrangell were determined to be communities which are most likely to harvest resources from the Project Area. All of these communities are designated rural except Juneau and Ketchikan.

Sitka is the most dependent on the Project Area for its deer harvest, deriving 38 percent of its total harvest from the Project Area for the years 1987 through 1992. Sitka is geographically the closest community to the Project Area and is the third largest community in Southeast Alaska.

No other community comes close to matching the use and deer harvest reported by Sitka residents. On average, Sitka harvests 90 percent of the deer that are taken from the Project Area. Sixteen other communities harvest the other ten percent of the deer harvest. Of this ten percent Juneau residents harvest two percent and residents of Haines, Petersburg, Wrangell, and Ketchikan each harvest one percent. Of these 5 communities Wrangell's harvest comprises six percent of its community's harvest, which is the highest percentage of a community's harvest of the five communities (Juneau, less than 1%; Ketchikan, 1%; Haines, 4%; Petersburg, 3%). In addition, on the TRUCS survey, Wrangell residents identified Project Area WAAs as most reliable and most often used areas for deer hunting.

Six communities identified Project Area WAAs as most reliable and most often used for deer hunting. In order of rank from the area identified as most reliable and most often used to the least they are: Sitka, Wrangell, Port Alexander, Port Protection, Tenakee Springs, and Angoon. However, neither Port Protection nor Tenakee Springs have reported harvesting deer from Project Area WAAs on the ADF&G hunter survey from 1987-1992.

Another test of an area's importance for deer hunting to a community is the consistency with which residents hunt there. Only the communities of Juneau and Sitka reported harvest in all the years from 1987 to 1992. Three communities, Angoon, Petersburg, and Ketchikan reported harvest in four of the six years. Wrangell reported harvest in three of the six years. All other communities harvested deer in none, one, or two of the six years.

Only three percent of the deer harvest from Project Area WAAs is taken by nonrural residents.

Rural communities comprising a significant proportion of the average harvest from Project Area WAAs include Sitka (90 percent), Haines (1 percent), Petersburg (1 percent), and Wrangell (1 percent).

Sitka's harvest of 90 percent of the deer taken from Project Area WAAs overshadows harvest from all other communities.

Angoon

Angoon residents primarily hunt the shoreline and beach fringe in Rodman Bay (6 to 15 percent of households) and along Peril Strait and Kakul Narrows from Point Elizabeth to Point Kakul (1 to 5 percent of households). There is little overlap of proposed units in the area where Angoon residents hunt. Proposed harvest units in VCU 288, 289 and 291 which are nearest to satlwater are adjacent to areas where 1 to 15 percent of Angoon households reported hunting.

Angoon's principal use of the Project Area for deer hunting takes place in WAA 3313. Angoon harvests an average of 2 percent of its deer from this WAA. Projected habitat capability is sufficient for both subsistence and nonsubsistence harvest through the year 2008. Angoon has also reported harvesting an average of 1 percent of its deer from WAA 3001. Estimated habitat capability is not sufficient to meet current subsistence demand in this WAA. Proposed project actions would further reduce the ability for this WAA to meet subsistence demand.

The chart shows the estimated demand for deer by Angoon residents and other subsistence and non-subsistence users for the area corresponding to the smallest number of Wildlife Analysis Units that cumulatively supply 90 percent of Angoon's current annual deer harvest. Also shown is the projected number of deer available for harvest assuming the greatest projected habitat reduction under the proposed alternatives. The proposed actions will not significantly affect Angoon's ability to meet its deer harvest requirements. Implementation of the preferred alternative of TLMP coupled with projected increases in demand may mean that there are an insufficient number of deer available for harvest in Angoon's primary use areas to meet both subsistence and non-subsistence demands by 2040.

Based limited use of the Project Area by Angoon residents and lack of projected direct effects on Angoon deer harvesting in the Project Area, there is no significant possibility of a significant restriction of subsistence use of deer by Angoon residents associated with the proposed actions.

Sitka

Use of the Project Area by residents of Sitka is so extensive that all of the alternatives, except the no action alternative, include cutting units located in areas used by Sitka residents for deer hunting. Alternative 4 involves the greatest aggregate overlap between cutting units and roads, and Sitka deer harvest areas.

Overlap of proposed harvest units and roads with areas used by the greatest percentage of Sitka households occurs in VCU 302 on St. John Peninsula and in VCU 299 along Nakwasina Passage. These harvest units are not proposed in Alternative three and there is no harvest proposed in VCU 299 in Alternative 2. Alternatives 4 and 1 both propose harvest in the areas used by a greater percentage of Sitka households.

Within the Project Area, WAA 3001 currently provides the largest number of deer for Sitka residents. The chart shows that the projected number of deer available for harvest under the project alternative associated with the greatest reduction in deer habitat in WAA 3001 is insufficient to meet the current subsistence demand for deer now and was prior to recorded timber harvest, indicating that restrictions on non-subsistence and possibly subsistence demands may become necessary even without the proposed project.

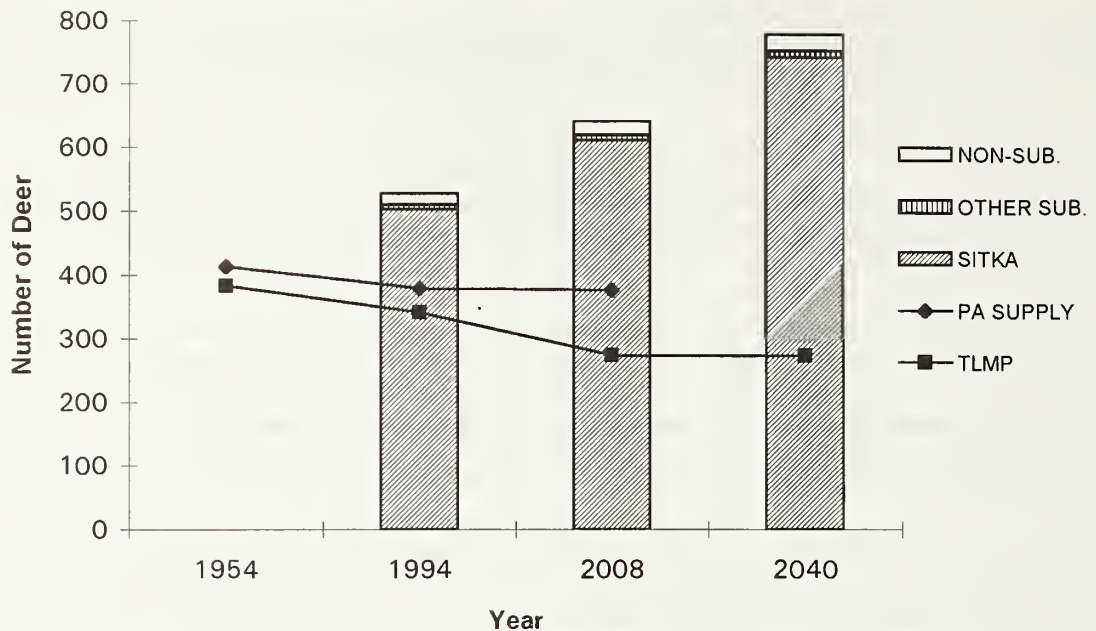
The chart also shows the estimated deer available for harvest if the preferred alternative of the Tongass Land Management Plan is implemented. According to these projections, demand continues to increase and habitat capability remains insufficient to meet projected demand for subsistence uses in the year 2040 assuming subsistence users do not shift their hunting elsewhere.

Sitka takes the majority of the deer harvested from WAAs 3001, 3312, 3313, and 3314. In every WAA except WAA 3313 current subsistence demand exceeds 10 percent of the habitat capability now and exceeded 10 percent of the habitat capability prior to extensive timber harvest. In WAA 3313 ten percent of the habitat capability is sufficient to meet subsistence and nonsubsistence demand now and through the year 2008 for the project but not through 2040 under TLMP.

The chart shows the estimated demand for deer by Sitka residents and other subsistence and non-subsistence users for the area corresponding to the smallest number of Wildlife Analysis Units that cumulatively supply 90 percent of Sitka's average annual deer harvest. Also shown is the projected number of deer available for harvest assuming the greatest projected habitat reduction under the proposed alternatives. This comparison of deer supply and demand indicates that there are currently and will be insufficient deer available for subsistence use in Sitka's primary hunting area. The proposed actions would further reduce Sitka's ability to meet its deer harvest requirements.

Currently Sitka's demand for deer exceeds the estimated supply in all but one of the Project Area WAAs. All of the Project Area WAAs are included in the WAAs which account for 90 percent of Sitka's total deer harvest. Implementation of any action alternative would reduce the potential number of deer available for harvest. Based on the effect of one or more of the project alternatives on the estimated number of deer available for harvest by Sitka residents, there is a significant possibility of a significant restriction of subsistence use of deer for Sitka residents. It may be possible to minimize this restriction by regulating nonsubsistence uses of areas most heavily used by Sitka residents for deer hunting.

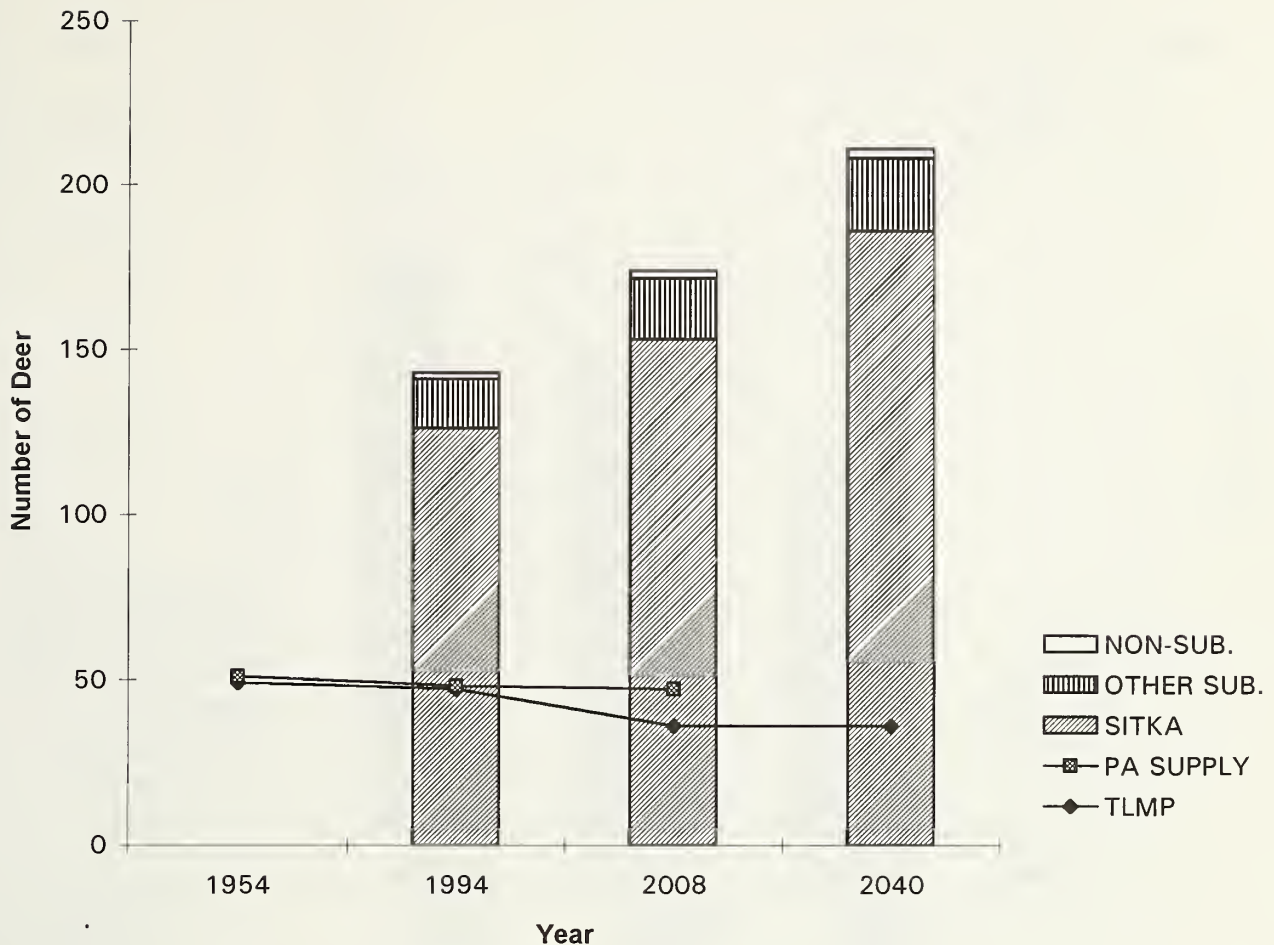
WAA 3001 Estimated Deer Supply and Demand



SOURCE: Hartmann 1995. Information derived from ADF&G Deer Hunter Surveys 1987 to 1992; TLMP Supplement to DEIS Appendix L; and Chatham Area GIS.

NOTE: Bars represent estimated and projected deer harvest demands. Harvest demand for 1994 is based on average annual harvest between 1987 and 1992. Projected harvest demand assumes that residents continue to use the areas from which they presently harvest 90 percent of their deer and demand for deer increases with projected community population growth at 14% per decade. "PA Supply" line displays 10 percent of the estimated habitat capability for deer in (1) 1954 before any timber harvest; (2) in 1994; and (3) in 2008 for the "worst-case" alternative. "TLMP" line displays 10 percent of the estimated habitat capability if the preferred alternative is implemented, as reported in Table L-3, Appendix L, Tongass Land Management Plan Revision, Supplement to the DEIS, August 1991.

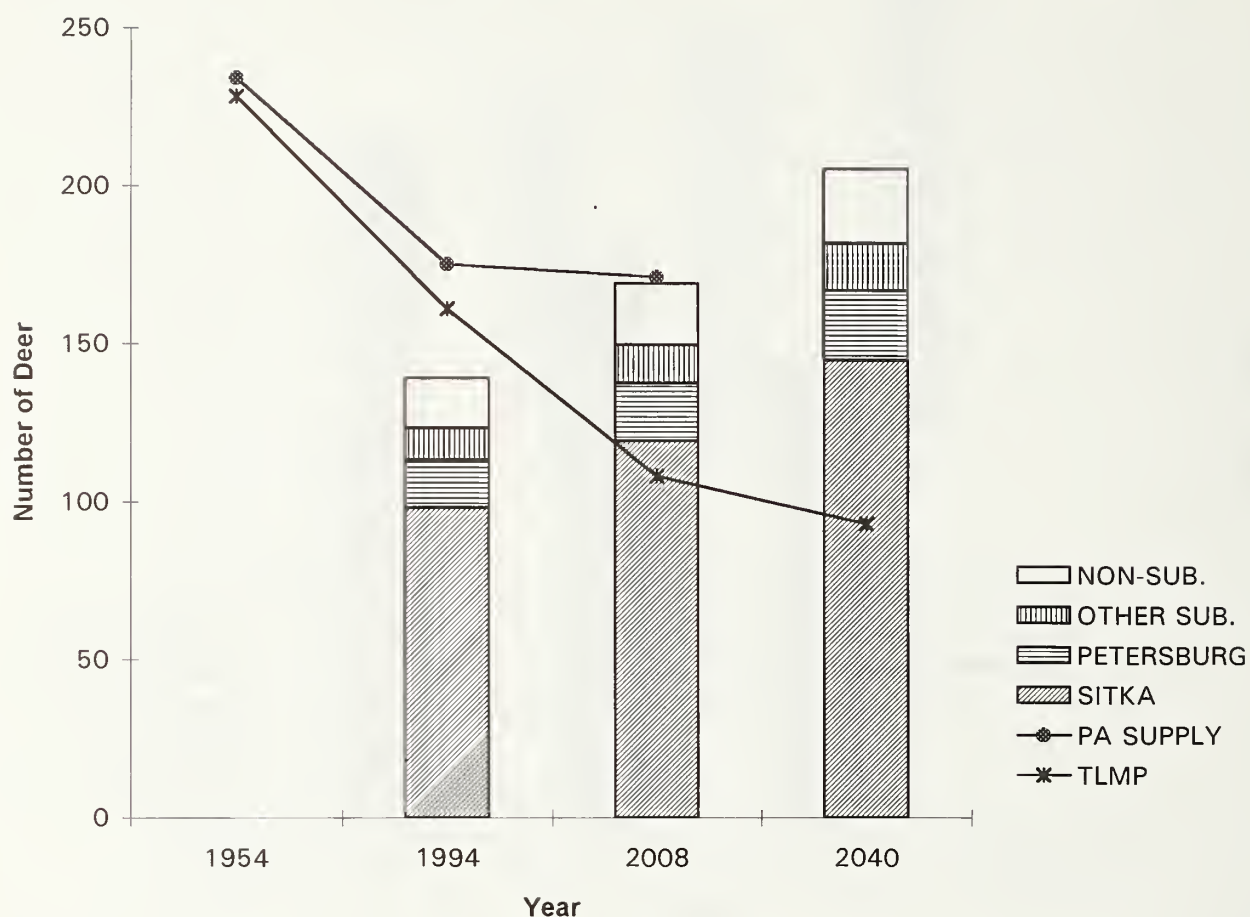
WAA 3312 Estimated Deer Supply and Demand



SOURCE: Hartmann 1995. Information derived from ADF&G Deer Hunter Surveys 1987 to 1992; TLMP Supplement to the DEIS Appendix L; and Chatham Area GIS.

NOTE: Bars represent estimated and projected deer harvest demands. Harvest demand for 1994 is based on average annual harvest between 1987 and 1992. Projected harvest demand assumes that residents continue to use the areas from which they presently harvest 90 percent of their deer and demand for deer increases with projected community population growth at 14% per decade. "PA Supply" line displays 10 percent of the estimated habitat capability for deer in (1) 1954 before any timber harvest; (2) in 1994; and (3) in 2008 for the "worst-case" alternative. "TLMP" line displays 10 percent of the estimated habitat capability if the preferred alternative is implemented, as reported in Table L-3, Appendix L, Tongass Land Management Plan Revision, Supplement

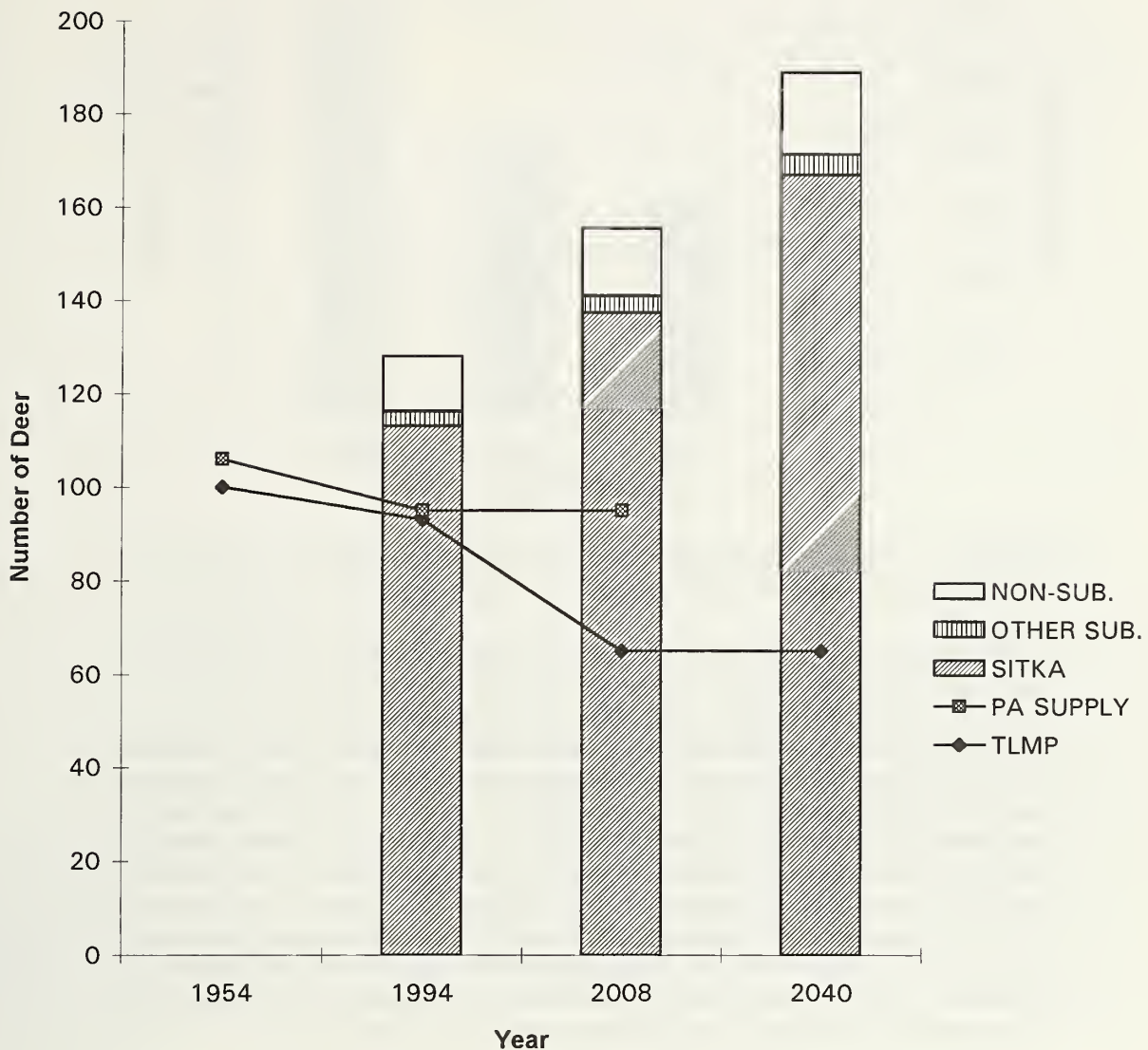
WAA 3313 Deer Supply and Demand



SOURCE: Hartmann 1995. Information derived from ADF&G Deer Hunter Surveys 1987 to 1992; TLMP Supplement to the DEIS Appendix L; and Chatham Area GIS.

NOTE: Bars represent estimated and projected deer harvest demands. Harvest demand for 1994 is based on average annual harvest between 1987 and 1992. Projected harvest demand assumes that residents continue to use the areas from which they presently harvest 90 percent of their deer and demand for deer increases with projected community population growth at 14% per decade. "PA Supply" line displays 10 percent of the estimated habitat capability for deer in (1) 1954 before any timber harvest; (2) in 1994; and (3) in 2008 for the "worst-case" alternative. "TLMP" line displays 10 percent of the estimated habitat capability if the preferred alternative is implemented, as reported in Table L-3, Appendix L,

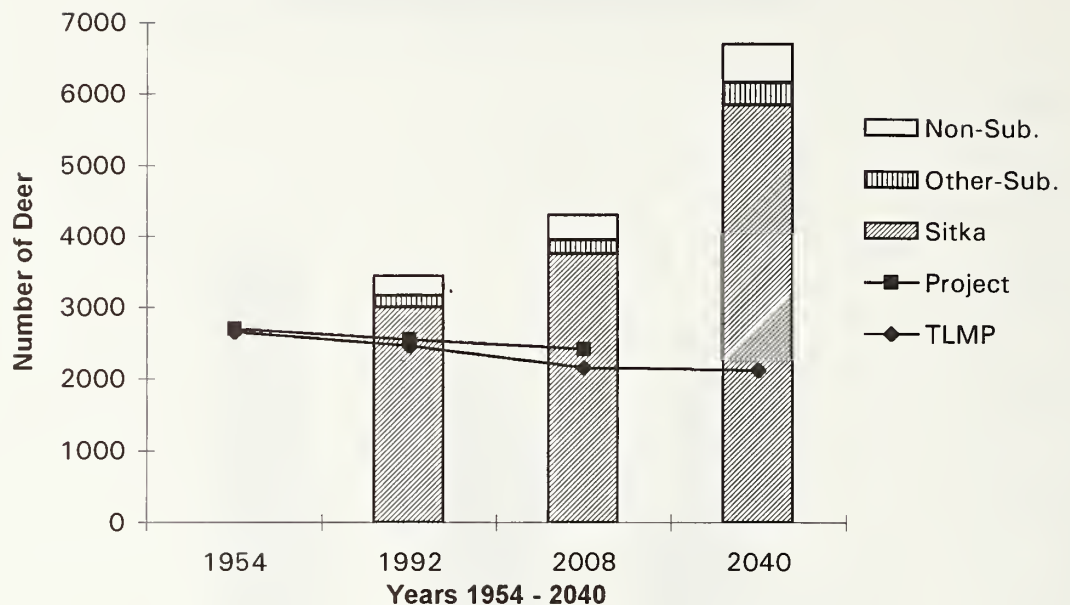
WAA 3314 Deer Supply and Demand



SOURCE: Hartmann 1995. Information derived from ADF&G Deer Hunter Surveys 1987 to 1992; TLMP Supplement to the DEIS Appendix L; and Chatham Area GIS.

NOTE: Bars represent estimated and projected deer harvest demands. Harvest demand for 1994 is based on average annual harvest between 1987 and 1992. Projected harvest demand assumes that residents continue to use the areas from which they presently harvest 90 percent of their deer and demand for deer increases with projected community population growth at 14% per decade. "PA Supply" line displays 10 percent of the estimated habitat capability for deer in (1) 1954 before any timber harvest; (2) in 1994; and (3) in 2008 for the "worst-case" alternative. "TLMP" line displays 10 percent of the estimated habitat capability if the preferred alternative is implemented, as reported in Table L-3, Appendix L, Tongass Land Management Plan Revision, Supplement to the DEIS, August 1991.

SITKA: Estimated Deer For Harvest Demand

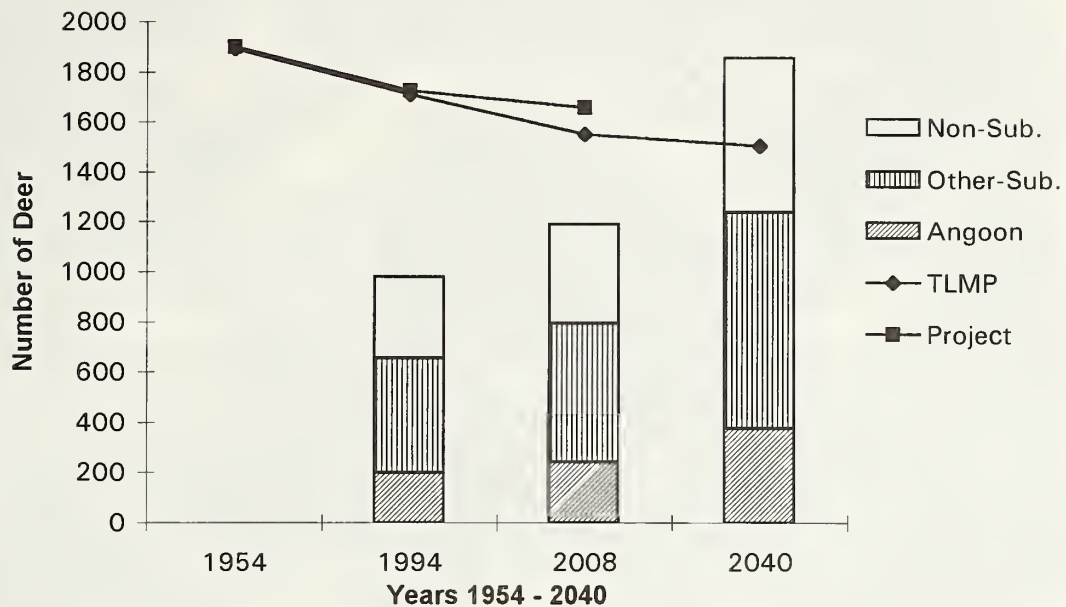


SOURCE: Hartmann 1995. Information derived from ADF&G Deer Hunter Surveys 1987 to 1992; TLMP Supplement to DEIS Appendix L; and Chatham Area GIS.

NOTE: Data is displayed only for those WAAs that accounted for 90 percent of the total deer harvest for this community (WAAs 3001, 3002, 3003, 3104, 3105, 3206, 3207, 3309, 3310, 3312, 3313, 3314, 3416 and 3417).

Bars represent estimated and projected deer harvest demands. Harvest demand for 1994 is based on average annual harvest between 1987 and 1992. Projected harvest demand assumes that residents continue to use the areas from which they presently harvest 90 percent of their deer and demand for deer increases with projected community population growth at 14% per decade. "Project" line displays 10 percent of the estimated habitat capability for deer in (1) 1954 before any timber harvest; (2) in 1994; and (3) in 2008 for the "worst-case" alternative. "TLMP" line displays 10 percent of the estimated habitat capability if the preferred alternative is implemented, as reported in Table L-3, Appendix L, Tongass Land Management Plan Revision, Supplement to the DEIS, August 1991.

Angoon: Estimated Deer For Harvest Demand

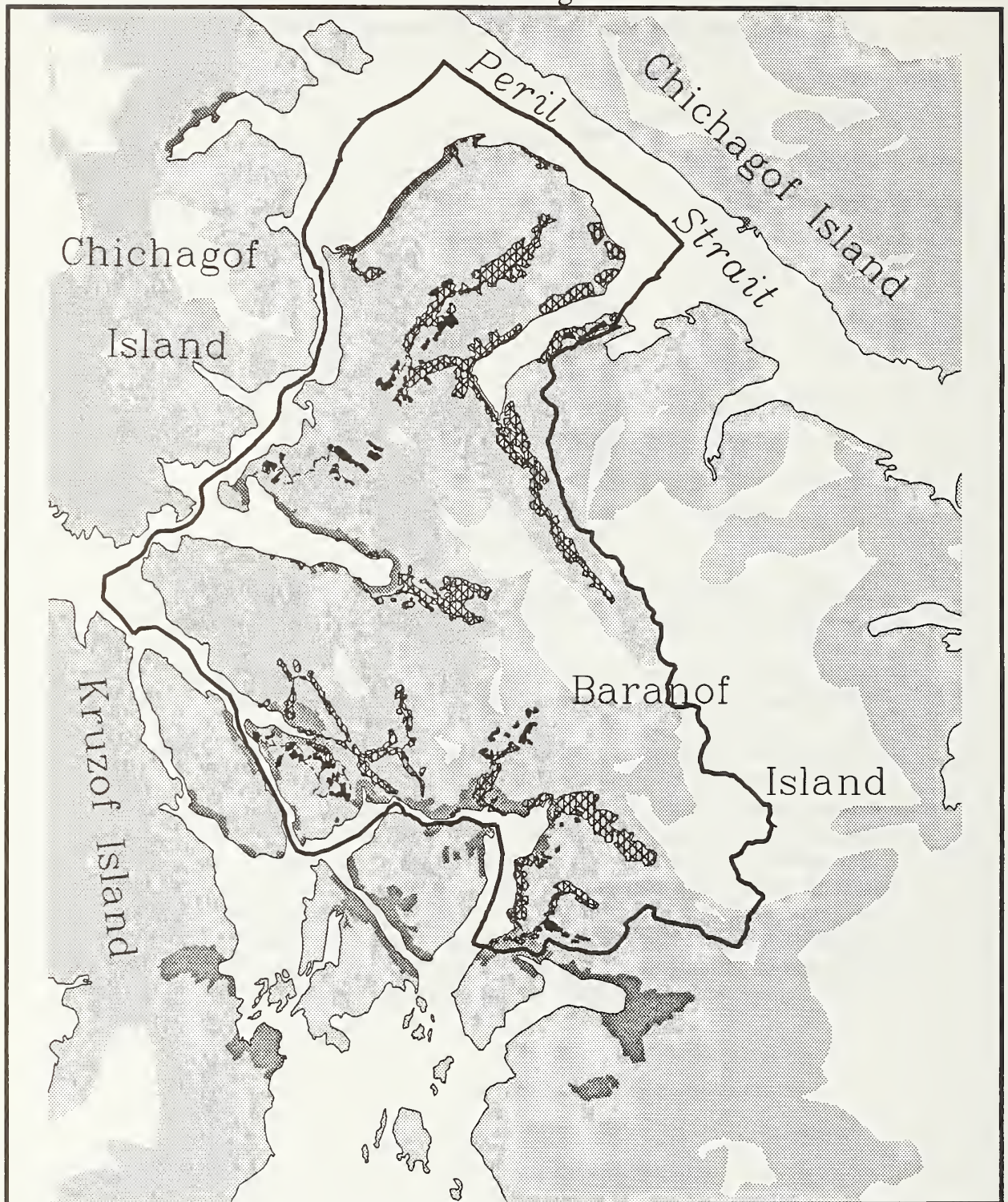


SOURCE: Hartmann 1995. Information derived from ADF&G Deer Hunter Surveys 1987 to 1992; TLMP Supplement to DEIS Appendix L; and Chatham Area GIS.








NOTE: Data is displayed only for those WAAs that accounted for 90 percent of the total deer harvest for this community (WAAs 3308, 3313, 3315, 4041, 4042, 4044, 4054 and 4055).

Bars represent estimated and projected deer harvest demands. Harvest demand for 1994 is based on average annual harvest between 1987 and 1992. Projected harvest demand assumes that residents continue to use the areas from which they presently harvest 90 percent of their deer and demand for deer increases with projected community population growth at 14% per decade. "Project" line displays 10 percent of the estimated habitat capability for deer in (1) 1954 before any timber harvest; (2) in 1994; and (3) in 2008 for the "worst-case" alternative. "TLMP" line displays 10 percent of the estimated habitat capability if the preferred alternative is implemented, as reported in Table L-3, Appendix L, Tongass Land Management Plan Revision, Supplement to the DEIS, August 1991.

Sitka Subsistence Deer Hunting Areas Alt - 1



Plotting Date April 20, 1996

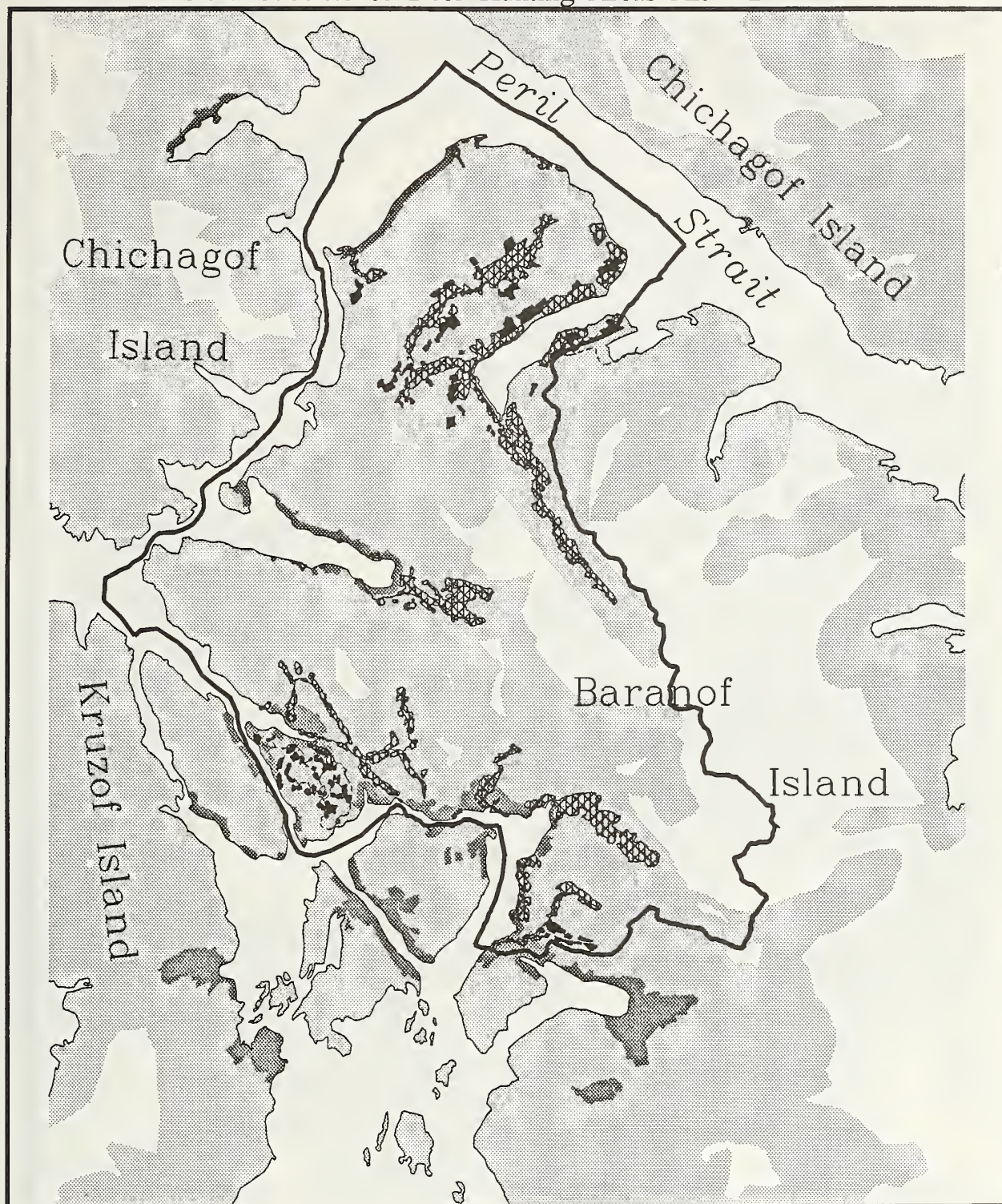
-  1 to 5 Percent of households
-  6 to 15 Percent of households
-  Project Boundary
-  Existing Roads
-  Proposed Roads
-  Existing Cuts
-  Proposed Cuts



Source: TRUCS, 1988; GIS

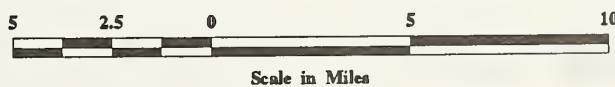
G-18

Sitka Subsistence Deer Hunting Areas Alt - 2



Plotting Date April 20, 1996

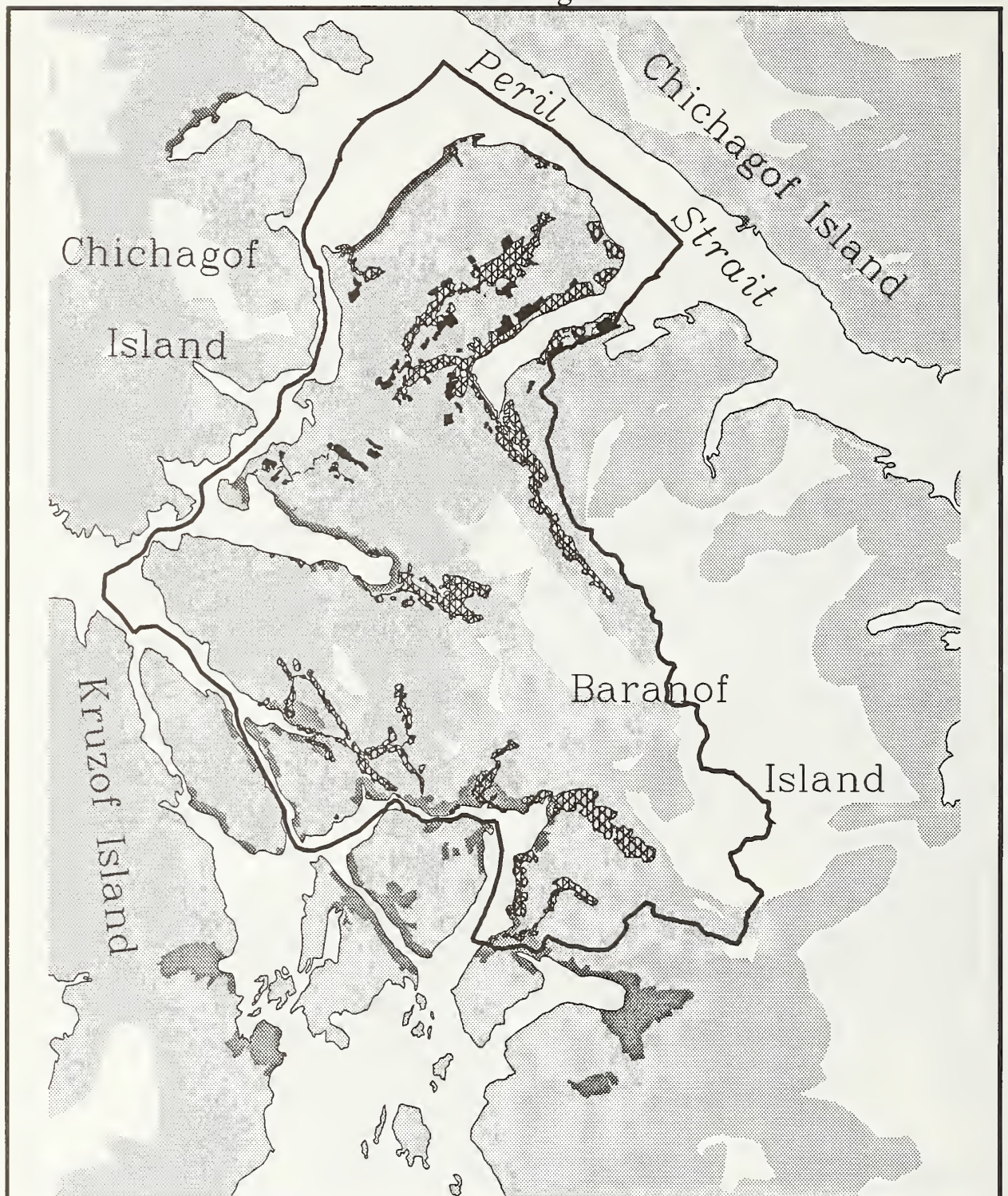
- 1 to 5 Percent of households
- 6 to 15 Percent of households
- Project Boundary
- Existing Roads
- Proposed Roads
- Existing Cuts
- Proposed Cuts



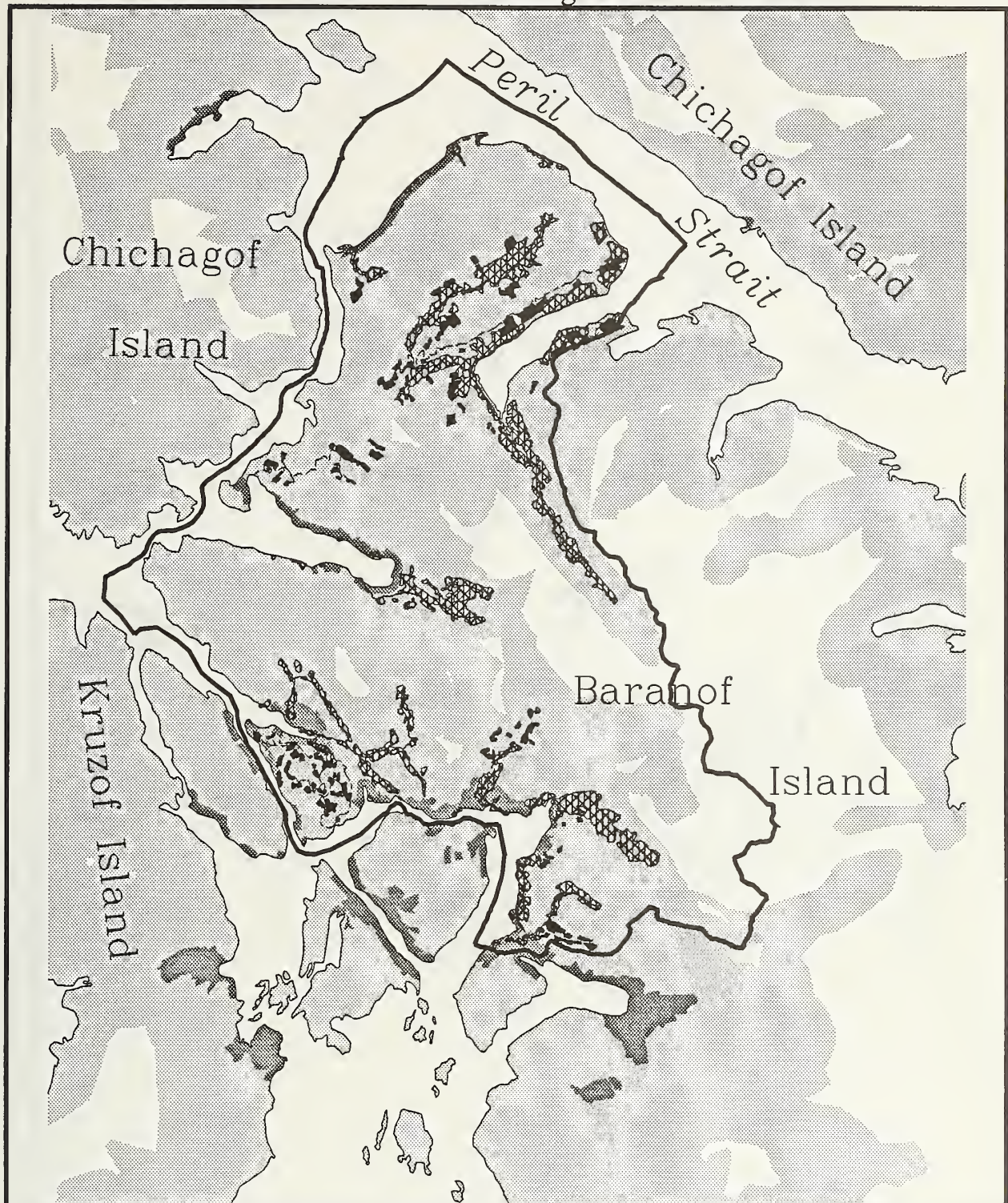
Source: TRUCS, 1988; GIS








G-19

Sitka Subsistence Deer Hunting Areas Alt - 3



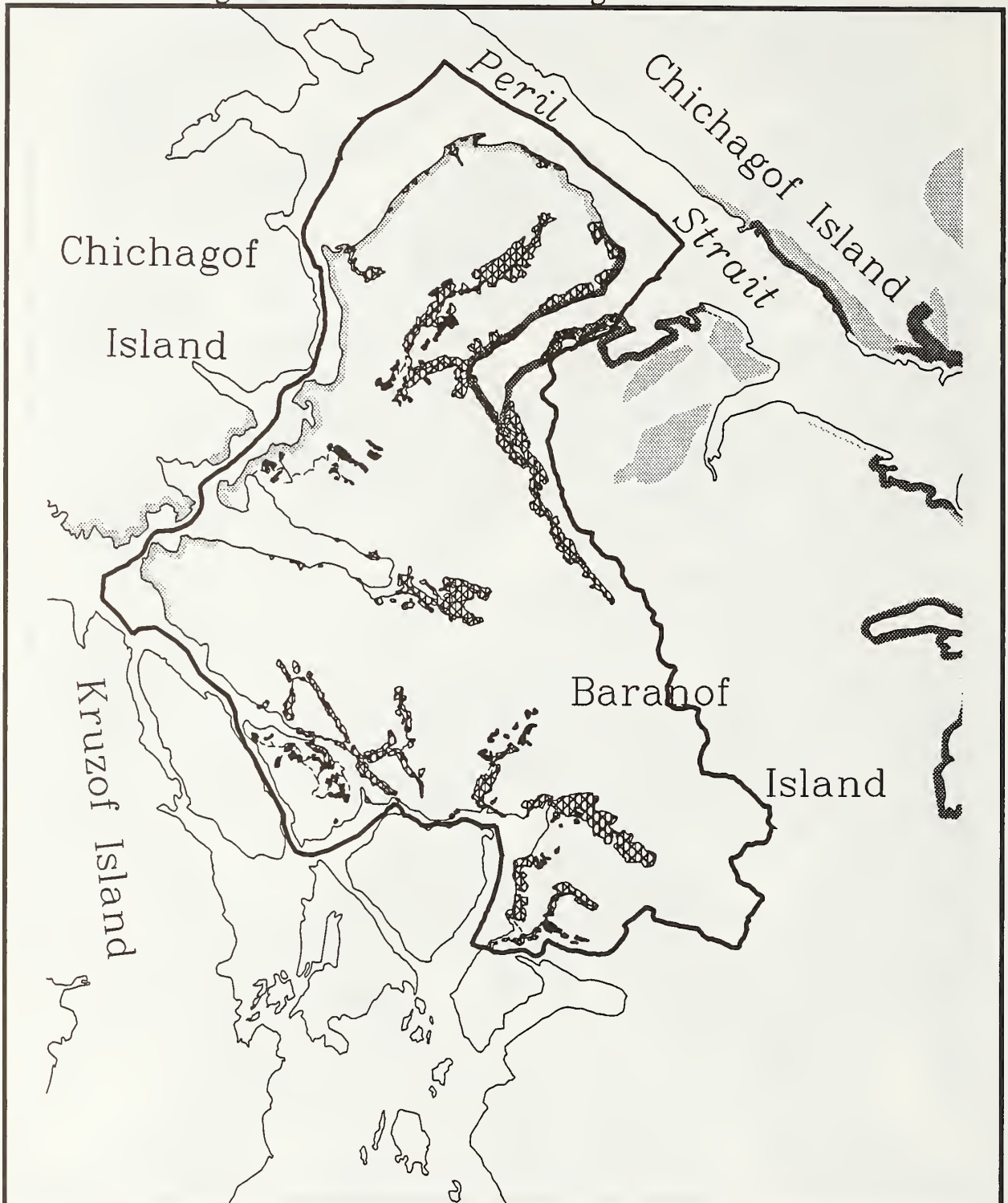
Sitka Subsistence Deer Hunting Areas Alt - 4










-  1 to 5 Percent of households
-  6 to 15 Percent of households
-  Project Boundary
-  Existing Roads
-  Proposed Roads
-  Existing Cuts
-  Proposed Cuts



Angoon Subsistence Deer Hunting Areas Alt - 1



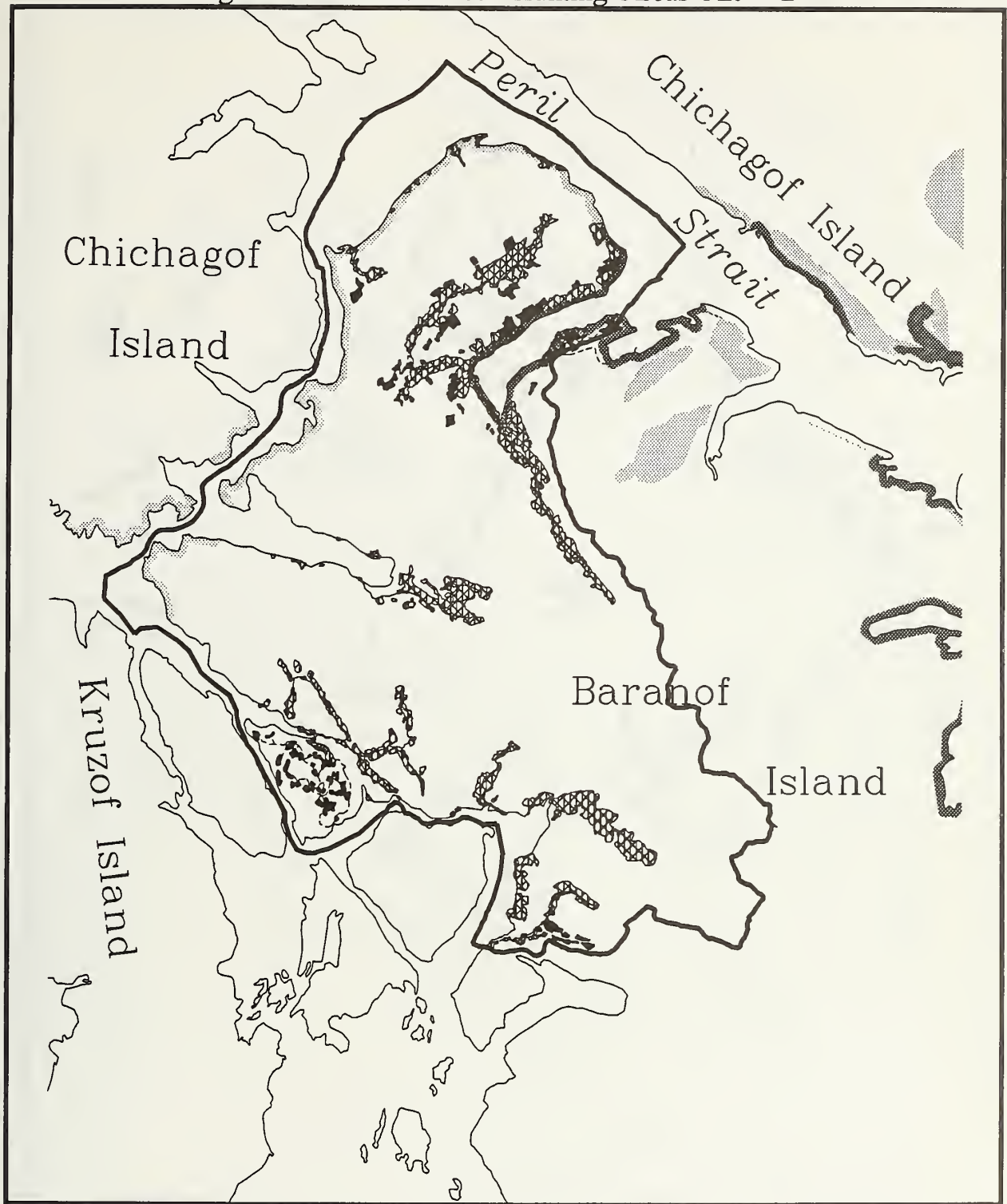
-  1 to 5 Percent of households
-  6 to 15 Percent of households
-  Project Boundary
-  Existing Roads
-  Proposed Roads
-  Existing Cuts
-  Proposed Cuts










Source: TRUCS, 1988; GIS

G-22

Angoon Subsistence Deer Hunting Areas Alt - 2

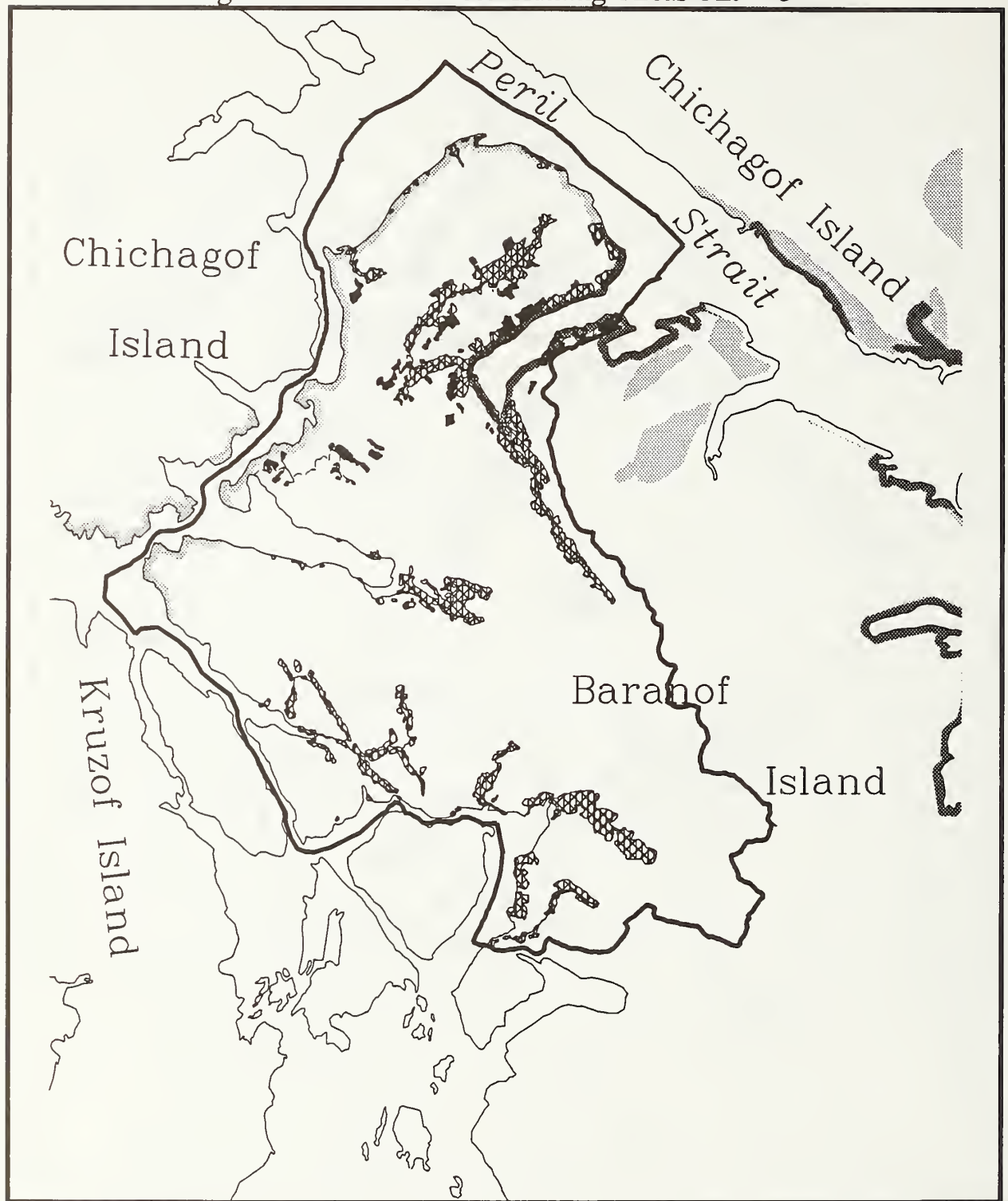


Plotting Date April 20, 1996

-  1 to 5 Percent of households
-  6 to 15 Percent of households
-  Project Boundary
-  Existing Roads
-  Proposed Roads
-  Existing Cuts
-  Proposed Cuts

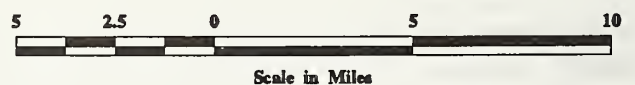


Angoon Subsistence Deer Hunting Areas Alt - 3



Plotting Date April 20, 1996

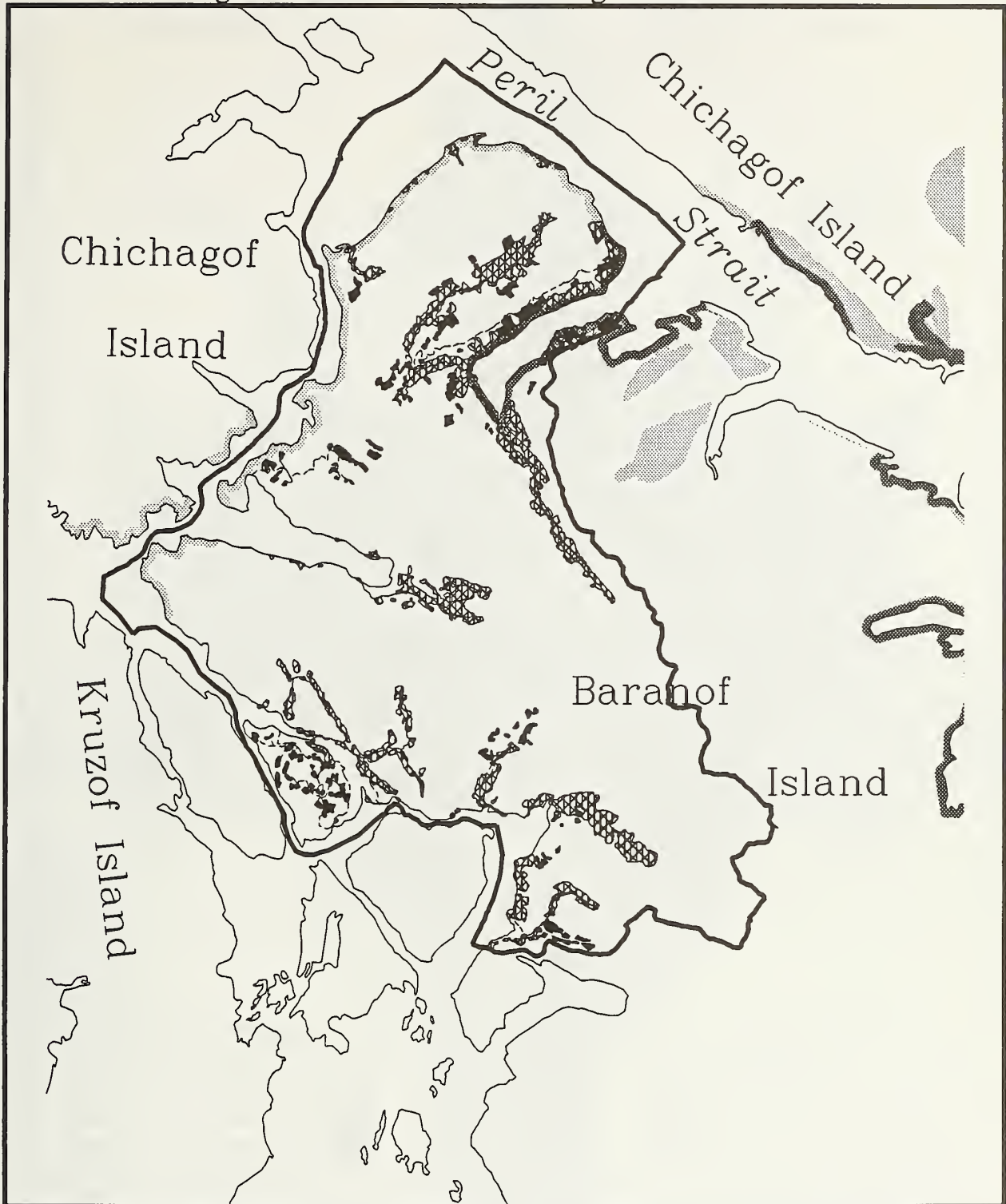
- 1 to 5 Percent of households
- 6 to 15 Percent of households
- Project Boundary
- Existing Roads
- Proposed Roads
- Existing Cuts
- Proposed Cuts










Source: TRUCS, 1988; GIS

G-24

Angoon Subsistence Deer Hunting Areas Alt - 4

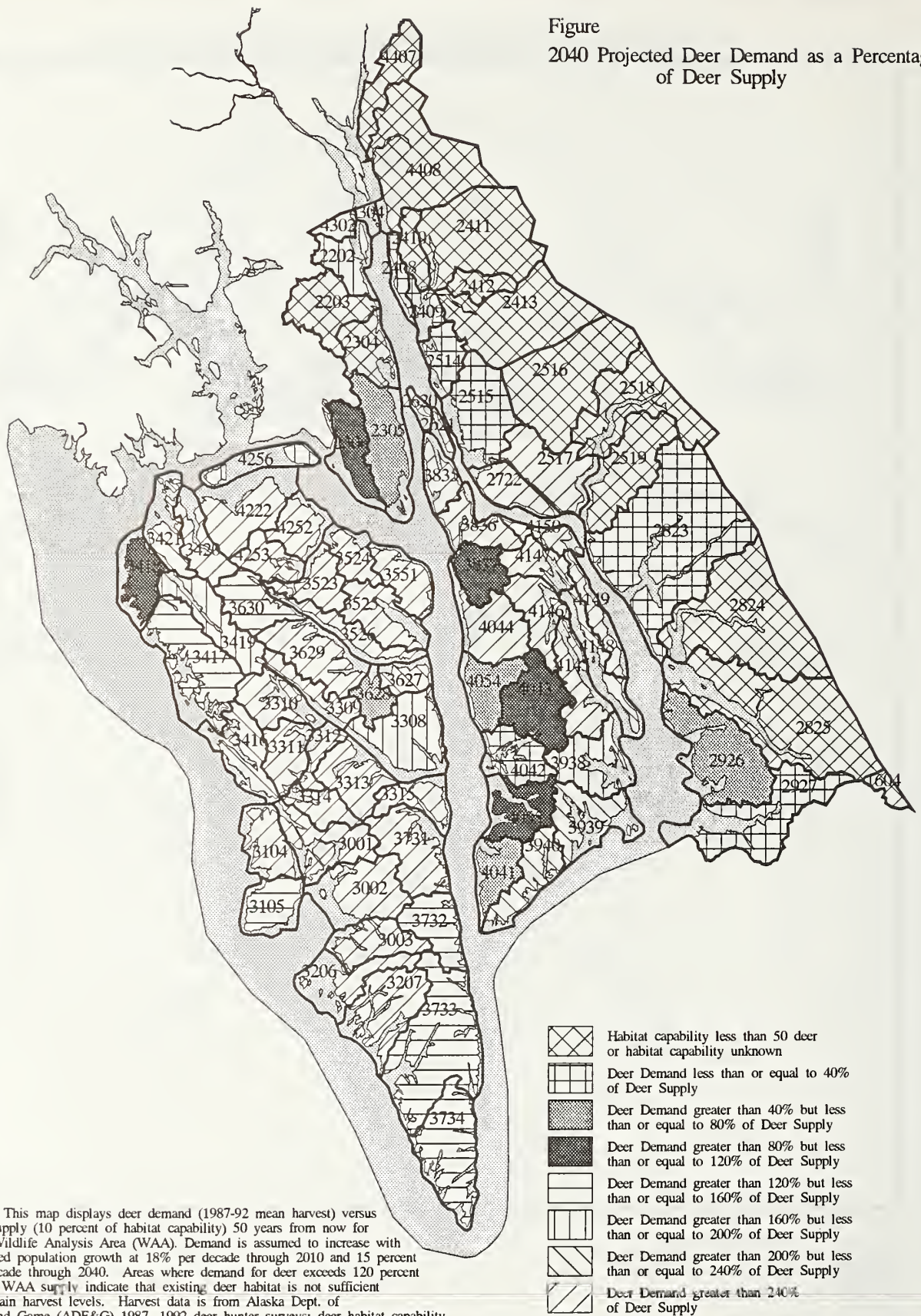


-  1 to 5 Percent of households
-  6 to 15 Percent of households
-  Project Boundary
-  Existing Roads
-  Proposed Roads
-  Existing Cuts
-  Proposed Cuts



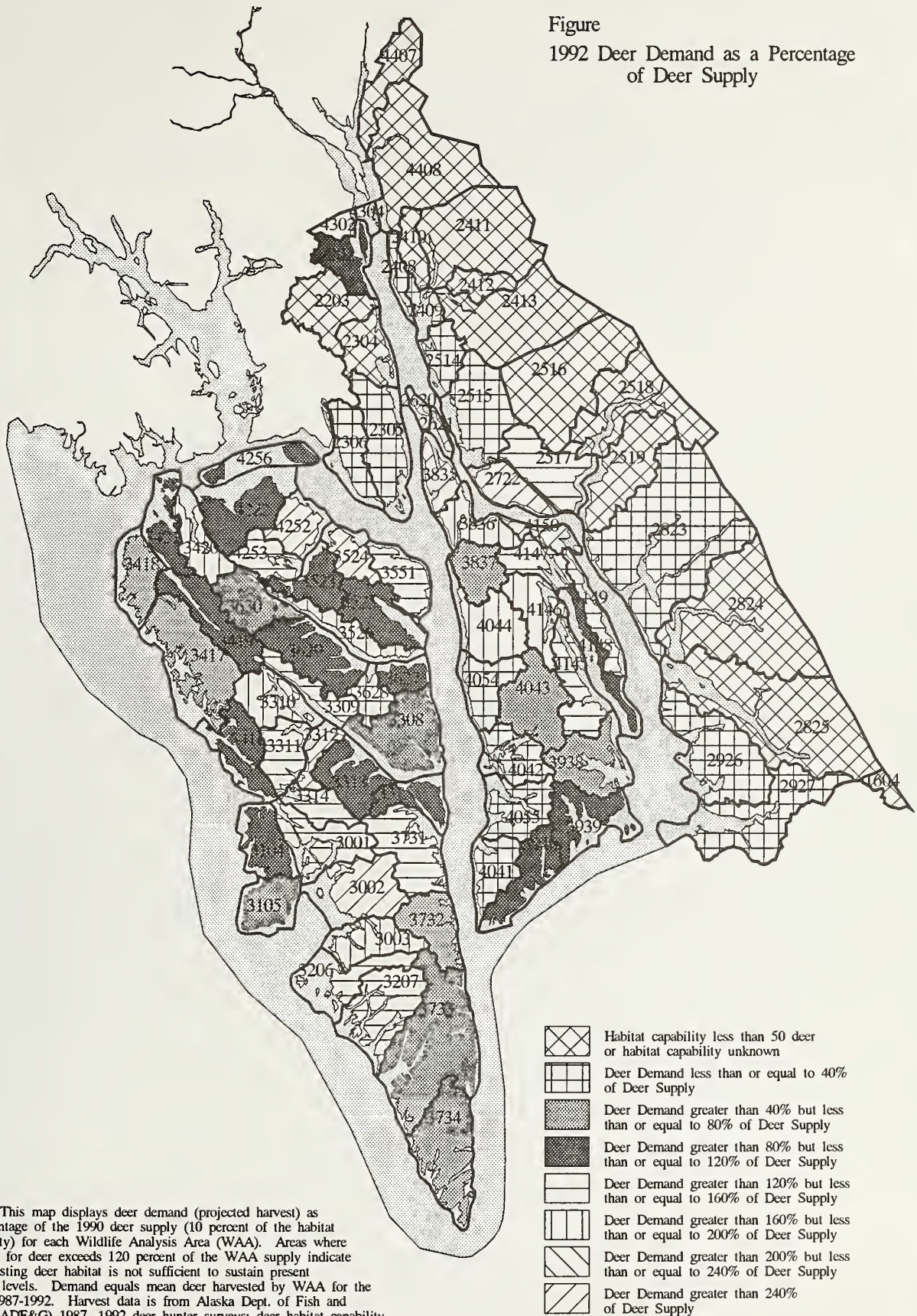
Figure

2040 Projected Deer Demand as a Percentage of Deer Supply



Note: This map displays deer demand (1987-92 mean harvest) versus deer supply (10 percent of habitat capability) 50 years from now for each Wildlife Analysis Area (WAA). Demand is assumed to increase with projected population growth at 18% per decade through 2010 and 15 percent per decade through 2040. Areas where demand for deer exceeds 120 percent of the WAA supply indicate that existing deer habitat is not sufficient to sustain harvest levels. Harvest data is from Alaska Dept. of Fish and Game (ADF&G) 1987- 1992 deer hunter surveys; deer habitat capability estimates are from the Tongass Land Management Plan Revision (TLMPR, 1991). Source: ADF&G Div. of Subsistence, Tongass National Forest, Chatham Area GIS.

Figure
1992 Deer Demand as a Percentage
of Deer Supply



Note: This map displays deer demand (projected harvest) as a percentage of the 1990 deer supply (10 percent of the habitat capability) for each Wildlife Analysis Area (WAA). Areas where demand for deer exceeds 120 percent of the WAA supply indicate that existing deer habitat is not sufficient to sustain present harvest levels. Demand equals mean deer harvested by WAA for the years 1987-1992. Harvest data is from Alaska Dept. of Fish and Game (ADF&G) 1987-1992 deer hunter surveys; deer habitat capability estimates are from Tongass Land Management Plan Revision (TLMRP, 1991). Source: ADF&G Div. of Subsistence, Tongass National Forest, Chatham Area GIS.

12 6 0 12 24
Scale in Miles



Appendix H

Wildlife

"Patch" Old-Growth Forest Distribution, 1956

Timber Volume > 8,000 bf/ac
Stand Age > 150 Years



 Saltwater
 Patch Old Growth

2 1 0 2 4

Scale in Miles

"Patch" Old-Growth Forest Distribution, 1994


Timber Volume > 8,000 bf/ac
Stand Age > 150 Years

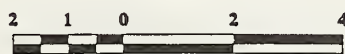


"Patch" Old-Growth Forest Distribution, Alt 1

Timber Volume > 8,000 bf/ac
Stand Age > 150 Years



 Saltwater
 Patch Old Growth



Scale in Miles

"Patch" Old-Growth Forest Distribution, Alt 2

Timber Volume > 8,000 bf/ac
Stand Age > 150 Years



 Saltwater
 Patch Old Growth


2 1 0 2 4

Scale in Miles

"Patch" Old-Growth Forest Distribution, Alt 3

Timber Volume > 8,000 bf/ac
Stand Age > 150 Years



 Saltwater
 Patch Old Growth



"Patch" Old-Growth Forest Distribution, Alt 4
Timber Volume > 8,000 bf/ac
Stand Age > 150 Years



Saltwater



Patch Old Growth

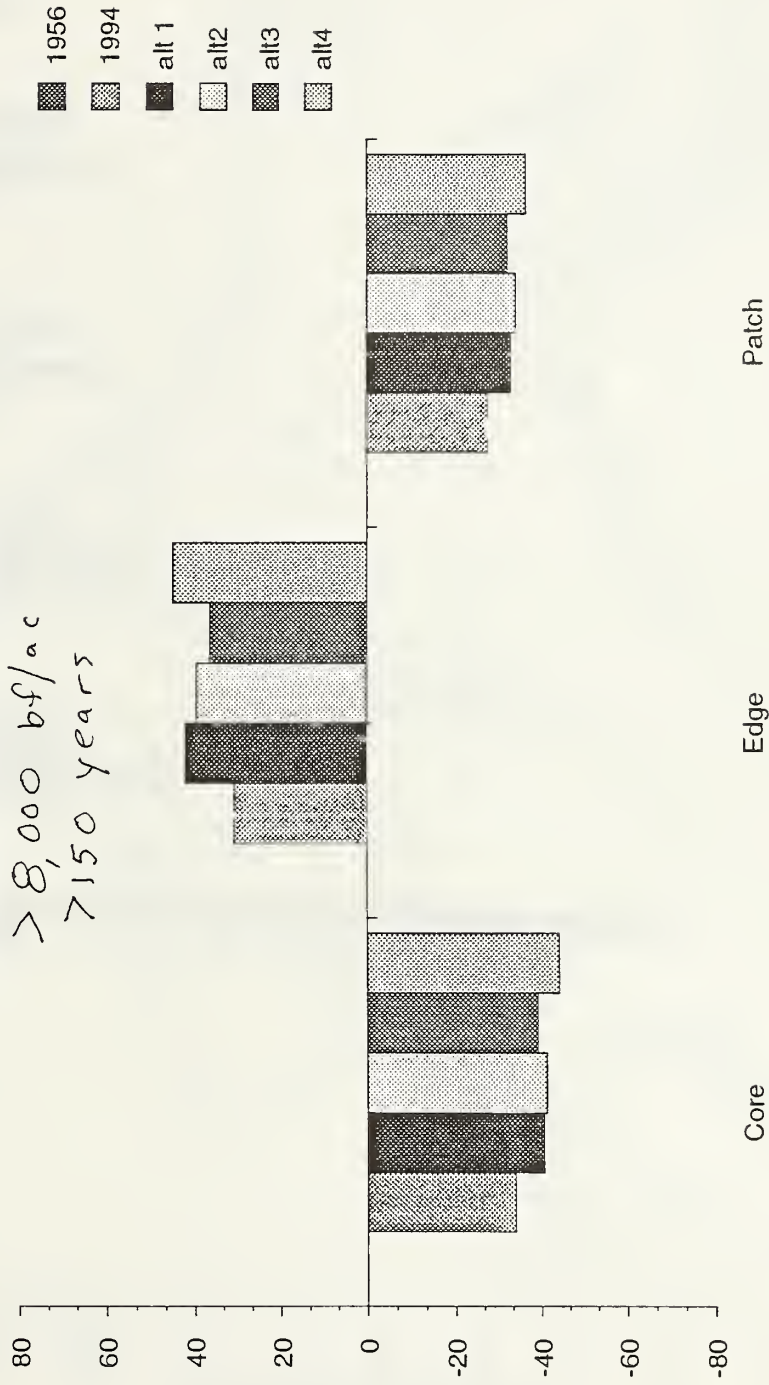


Scale in Miles

Percent Change from 1956 for Core, Edge, and Patch Acreage by Alternative 'Patch A'

Northwest Baranof Project

> 8,000 bf/ac
> 150 years



> 8,000 bf/ac
> 150 years



data 0	0 - 25
data 1	25 - 75
data 2	75 - 200
data 3	200 - 500
data 4	500 - 1600
data 5	1600 - 2500
data 6	2500 - 10,000
data 7	10,000 +



"Patch" Old-Growth Forest Distribution, 1956

Timber Volume > 20,000 bf/a
Stand Age > 150 Years



 Saltwater
 Patch Old Growth

2 1 0 2 4

Scale in Miles

"Patch" Old-Growth Forest Distribution, 1994

Timber Volume > 20,000 bf/
Stand Age > 150 Years



Saltwater

Patch Old Growth



Scale in Miles

"Patch" Old-Growth Forest Distribution, Alt 1
Timber Volume > 20,000 bf/a
Stand Age > 150 Years



 Saltwater
 Patch Old Growth

2 1 0 2 4

Scale in Miles

"Patch" Old-Growth Forest Distribution, Alt 2

Timber Volume > 20,000 bf/a
Stand Age > 150 Years



"Patch" Old-Growth Forest Distribution, Alt 3

Timber Volume > 20,000 bfl/a

Stand Age > 150 Years



Legend:
Saltwater
Patch Old Growth

2 1 0 2 4
Scale in Miles

"Patch" Old-Growth Forest Distribution, Alt 4

Timber Volume > 20,000 bf/a

Stand Age > 150 Years



Saltwater

Patch Old Growth

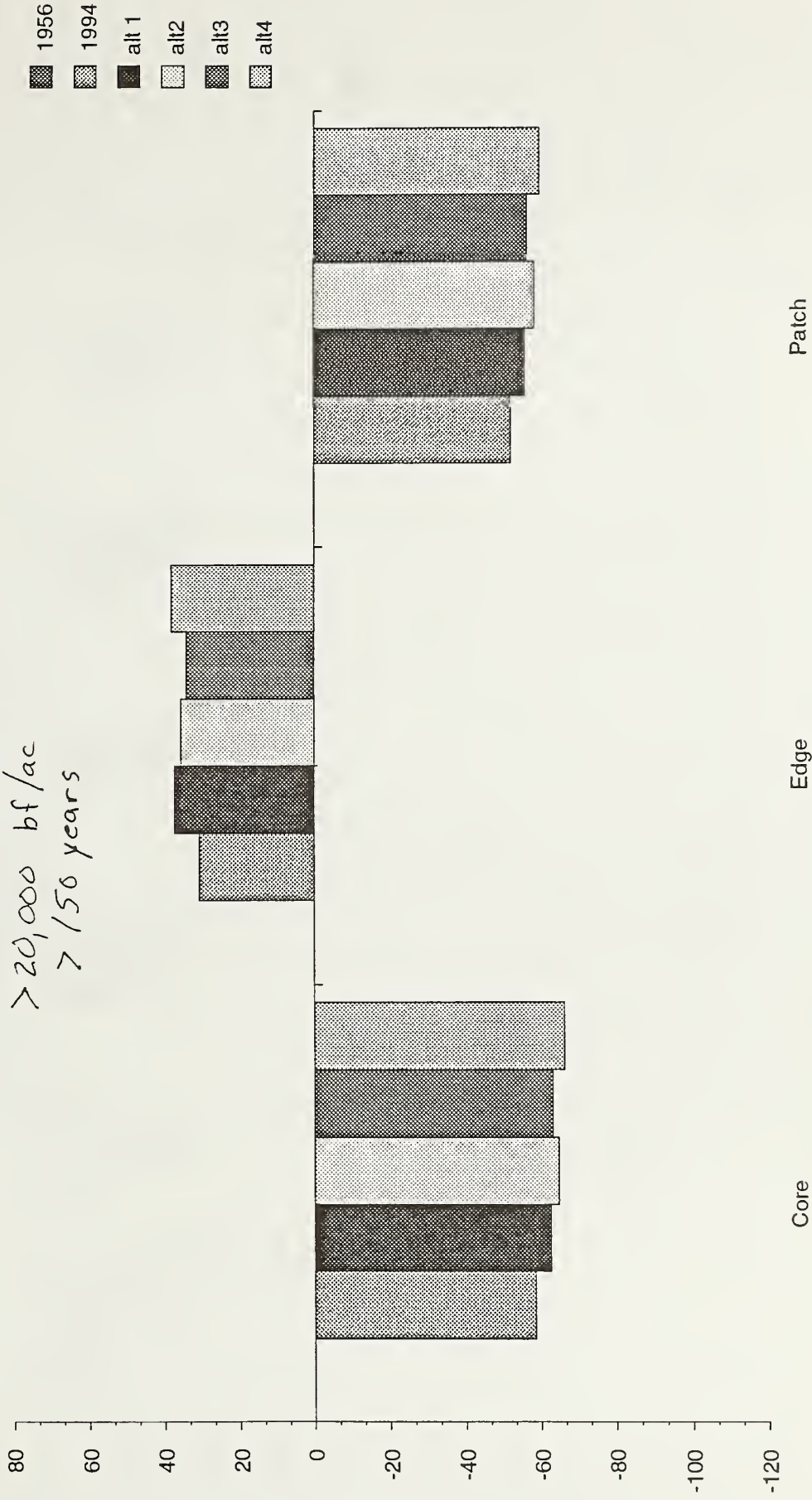


Scale in Miles

Percent Change from 1956 for Core, Edge, and Patch Acreage by Alternative, 'Patch B'

Northwest Baranof Project

> 20,000 bf/ac
> 150 years



Patch B size groups

> 8,000 bf/acre
> 150+ years

Acres

- data 0 0-25
- data 1 25-75
- data 2 75-200
- data 3 200-500
- data 4 500-1600
- data 5 1600-2500
- data 6 2500-10,000
- data 7 10,000+



Appendix I

Fish and Water

TTRA Stream Buffers (DRAFT)

Sitka Ranger District Implementation Methodology

November, 1993

The Law

Public Law 101-626, Tongass Timber Reform Act (TTRA) Sec. 103 (e), Fisheries Protection, states, "In order to assure protection of riparian habitat, the Secretary shall maintain a buffer zone of no less than one hundred feet in width on each side of all Class I streams in the Tongass National Forest, and on those Class II streams which flow directly into a Class I stream, within which commercial timber harvesting shall be prohibited...For the purposes of this subsection, the terms 'Class I streams' and 'Class II streams' mean the same as they do in the Region 10 Aquatic Habitat Management Handbook (FSH 2609.24), June 1986".

Regional Interpretation

The Aquatic Habitat Management Handbook defines Class I streams as "Streams with anadromous or adfluvial fish habitat...Also included is the habitat upstream from migration barriers known to be reasonable enhancement opportunities for anadromous fish". Adfluvial is defined as "Species or populations that do not go to sea, but live in lakes, and enter streams to spawn". Class II streams are defined as "Streams with resident fish populations and generally steep (6-15 percent) gradient (can also include streams from 0-6 percent gradient where no anadromous fish occur)."

District Interpretation

The clause in TTRA, "...Class II streams which flow directly into a Class I stream", is subject to interpretation. Stream classes on the Tongass National Forest have generally been designated only for streams wider than one meter, or longer than one mile, and usually by air photo interpretation with minimal ground review. Although a stream

may branch repeatedly, hydrologists, fisheries biologists and stream ecologists generally consider streams as a continuum. Therefore, we consider all Class II streams that do not flow directly to saltwater to be Class II streams that flow directly into Class I streams.

Evaluation of Early TTRA Implementation on the Sitka District

No regional interpretation or guidelines were established to implement TTRA. In July 1993, an interdisciplinary evaluation of eight units harvested immediately after passage of TTRA showed that there was inconsistency in the interpretation and implementation of the law. There also were instances where we did not provide 100' minimum buffers along mainstream, Class I channels. The review was expanded to include unharvested units in the SEIS, Kelp Bay, and Southeast Chichagof Project areas (Appendix A).

The review showed a need for additional training of employees involved with timber sale and road layout, and more careful application of the Law. More frequent measurements are necessary during layout to account for stream meanders. If a unit is flagged exactly 100' from a stream, then paint crews need to paint inside the flags (away from the stream) to maintain a legally minimum buffer. The closer management activities get to the minimum sized buffer, the greater care must be taken to meet the letter and intent of the Law.

Sitka District Implementation: Current Guidance

TTRA directs buffers for fish streams to be based on the definition of Class I and II streams in the Aquatic Habitat Management Handbook. In conformance to the Handbook, we identified potential fish habitat without regard to stream size, flow status, or quality. The law states a 100' minimum buffer. We considered that to mean any measurable point along any fish stream. Given those premises, implementation decisions were limited to (1) distinguishing stream classes (i.e., I, II, and III), and (2) determining the edge of the stream.

A combination of factors were considered to evaluate fish habitat. Generally, a waterfall or other hydrologic feature established a break between Class I/II and Class III habitat. Gradient alone proved an unreliable criteria to determine stream classes. We encountered streams exceeding 20% slope that had fish.

Special Cases

Do you buffer 100' upstream from Class I/II habitat at the Class III transition?

- The law states that buffers must be on each side of the fish stream. We did not buffer 100' into the Class III stream section. The need for a buffer on any portion of a Class III stream was determined by Best Management Practices (BMP's). Figure 1 shows a schematic of a harvest unit with 100' buffers along Class I/II streams. Note that the stream was not buffered immediately above the Class I/II transition, although there is a buffered fringe at the top of the unit (e.g., deeply incised v-notch).

Do you buffer a stream where fish are absent (or at least unseen), but where fish have access and suitable habitat?

- The Law addresses habitat, not presence or absence of fish. We buffered all habitable streams with fish access. Presence or absence of fish proved to be a poor indicator of fish habitat. Through the fall, winter and spring months, most fish are relatively inactive and reside in the substrate or in root-wad pools. In warmer weather, during the time period when fish are easiest to view, droughts or floods alter the habitable stream. Without extensive sampling, it would be easy to overlook many fish streams.

If no obvious barrier is present, but a stream appears uninhabitable, should it be buffered?

- If the stream was accessible but uninhabitable, then it was not considered fish habitat, and BMP's were used to determine stream protection needs. For example, some moderate-to-high gradient alluvial fan channels have no obvious fish passage barriers, but move tremendous amounts of bedload and therefore are unsuitable for fish. Likewise, some intermittent and ephemeral streams were accessible, but considered uninhabitable if they tended to trap fish when flows receded.

How do you measure a stream that meanders, or a stream that angles away from a Class III stream?

- We measured perpendicular to the streamcourse direction, and accounted for all bends in the stream. If the Class I/II stream angled away from the Class III stream (Figure 1), we measured perpendicular to the flow, or out a minimum of 100' from a tangent on the Class I/II portion. As in Figure 1, some parts of a buffer may exceed the minimum requirement, but no part of the buffer may be less than 100 feet.

How do you measure a floodplain channel?

- We measured from the upper bank of the floodplain, not the active channel (Figure 2). Although the stream may flood to the upper bank for only a few days each year, those few days are often critical to the survival of rearing fish. The floodplain provides high water refuge (e.g., alcoves, lateral scour pools, rootwad pools) that may be the only habitable area during a flood. Furthermore, the active channel tends to move within the floodplain over time. Even small streams may have floodplains or alluvial fans that require protection.

How large does a fish stream have to be to get buffered?

- The law only addresses the stream class, not the size of the stream. We buffered all potential fish streams regardless of size. The smallest streams were less than one foot in width.

What constitutes a minimum 100' buffer? Does there have to be 100' of trees?

- The law states that within the buffer, there can be no commercial timber harvest. We measured out a minimum of 100 feet then established a cutting or road right-of-way boundary. In that minimum 100 feet, there may or may not have been trees. The buffer consists of whatever natural vegetation is adjacent to the stream.

Can you construct a road across a Class I/II stream buffer?

- Some management activities cannot be kept out of the stream buffer. Where road construction, or any operations

within a buffer were necessary and unavoidable, we developed a Stream-course Protection Plan. The plan specified which timber, if any, could be removed from within the buffer, and pertinent mitigation measures. Figure 3 shows a road crossing through a buffer. Roads were located to cross perpendicular to streams. Our policy was to establish right-of-way cutting limits to prevent paralleling Class I/II streams within the buffer.

Can guyline circles and yarding corridors occur within the buffer?

- The Alaska Region Timber Management staff in Juneau interpreted TTRA and provided written direction allowing yarding corridors and guyline circles within the TTRA buffer (Appendix B). In Figure 3, the location of Landing 3 is so close to the buffer that some guy-lines to the yarding tower would have to be anchored within the buffer to get the proper holding angle. As for road crossings, we developed a Stream-course Protection Plan for unavoidable incursions.

How do you treat high gradient sections that occur downstream from Class II streams or adfluvial lakes?

- We assumed fish could migrate downstream from the Class II streams and adfluvial lakes to occupy available habitat, and these sections were buffered accordingly. The Chatham Area GIS stream class database will be updated to apply this interpretation Area-wide.

Interdisciplinary Coordination

Over 120 post-TTRA timber sale harvest units were reviewed in 1993. Changes were made in over 100 units to comply with TTRA. The results indicated it was necessary to have a fisheries

biologist or hydrologist review every proposed unit where a Class I or II stream could occur.

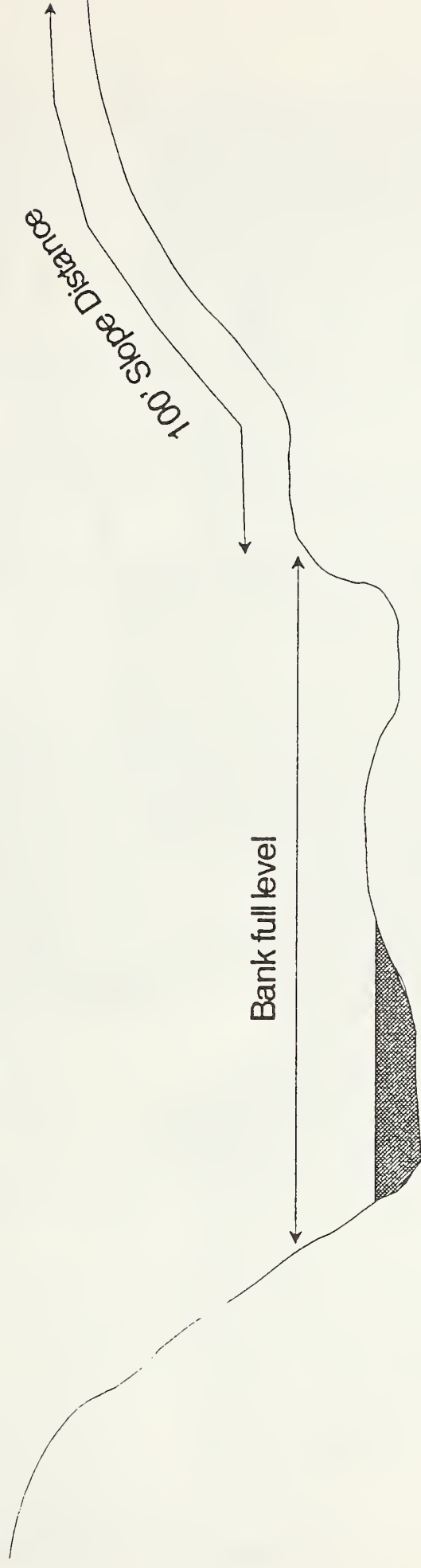
The bulk of the review and subsequent TTRA implementation was conducted by the following District personnel:

- Bill Lorenz - B.S. Wildlife Science, M.S. Fisheries Biology, 14 years experience.
- Greg Killinger - B.S. Wildlife Sciences, M.S. candidate Natural Resources, 10 years experience.
- Terry Suminski, B.S. Wildlife Sciences, 6 years experience.
- Sheila Mraz - B.S. Fisheries Biology, 4 years experience.
- Brett Light - B.S. Aquatic Resources, 3 years experience.

Other participants in the Sitka District review included:

- Jim Franzel, Sitka District Ranger
- Jere Christner, Fish/Wildlife/Watershed/Ecology/Subsistence Staff Officer
- Tom Hudson, Harvest Inspector
- Chris Woodling, Harvest Inspector
- Dan Kelliher, Hydrologist

Figure 2. Cross-sectional profile of a floodplain. Measure slope distance from the bank full stage of the floodplain to account for rearing channels, alcoves, channel bends, and high water fish refugia.



Note: Paint merchantable trees that are on the boundary to avoid ambiguity. Look for topological features to indicate bankfull level in addition to vegetative cover.

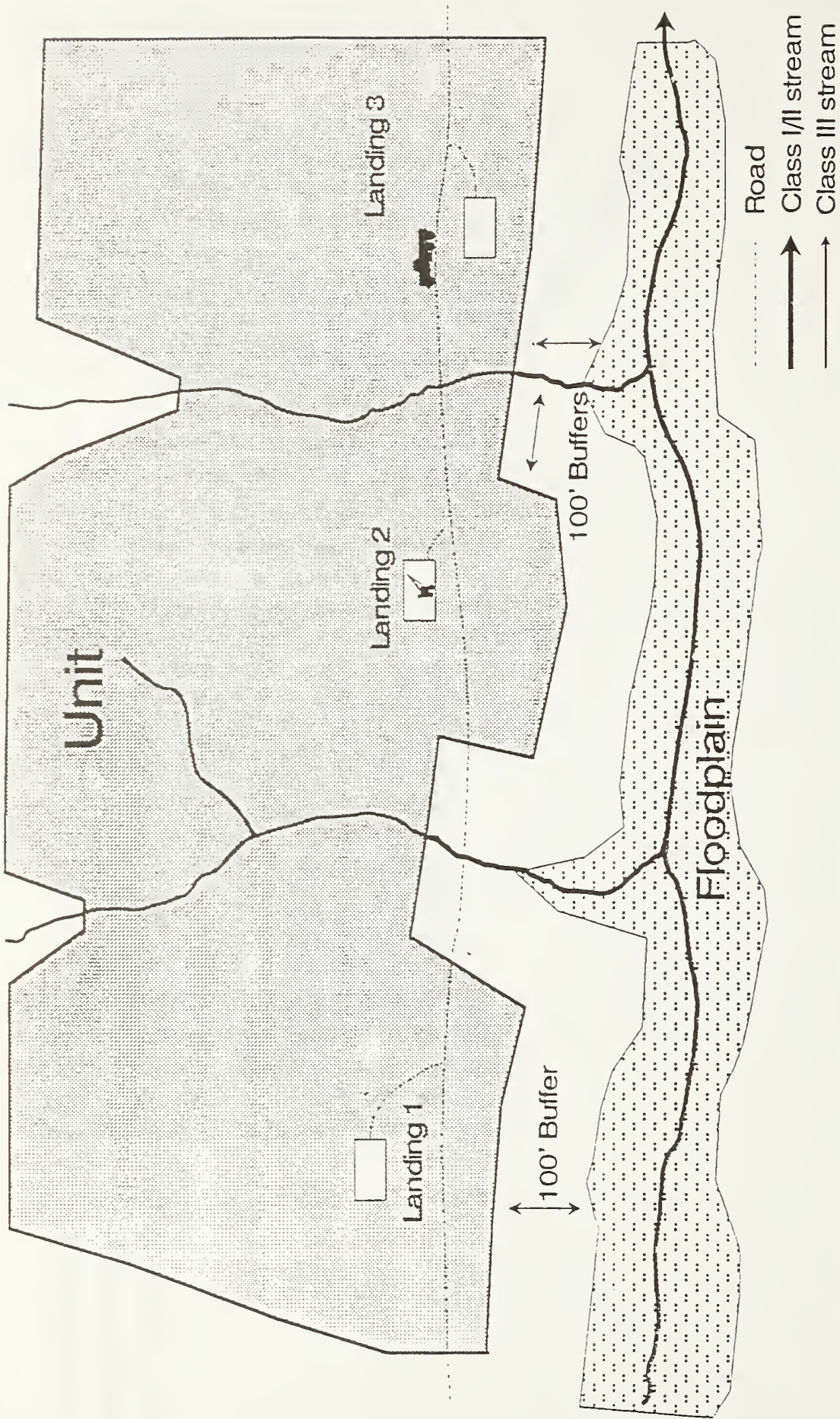


Figure 3. Harvest unit with road making a perpendicular crossing through a Class I/II stream buffer, and three landings located to enable yarding away from major tributaries. The guyline circle for landing 3 would be within the stream buffer, a practice we avoid whenever possible. BMP's dictate need for streamcourse protection measures on Class III streams.



United States
Department of
Agriculture

Forest
Service

Alaska Region

P.O. Box 21628
Juneau, AK 99802-1628

File Code: 2620/2520

Date: NOV 21 1995

Subject: Stream Buffers and Classification

To: Forest Supervisors and Staff Directors

This letter clarifies:

1. Stream Classification: Standard stream classification for all National Forest System lands in Alaska.
2. Minimum Statutory Stream Buffers: Standard technical definition for " . . . flow directly into . . . " as found in section 103 (a) of the Tongass Timber Reform Act (TTRA).

Stream Classification

A consistent and comprehensive classification system is needed for all streams in the Alaska Region. Improved classification will also respond to recommendations in the Anadromous Fish Habitat Assessment Report. The classification system delineated below incorporates and clarifies the Class I and II stream categories referenced in the TTRA and Class III definition in the Region 10 Aquatic Habitat Management Handbook, and adds Class IV and nonstream watercourse categories. This classification system will establish consistent stream classification across the Region, better describe relative significance of streams for water uses described by the State of Alaska (18 ACC 70.020), lead to better public understanding of stream capabilities, be more useful for project work, and be an important component of revision of the Tongass and Chugach Land Management Plans.

The following classification system will be used across the Alaska Region:

Class I: Streams with anadromous or adfluvial fish habitat; or high quality resident fish waters listed in Appendix 68.1, Region 10 Aquatic Habitat Management Handbook (FSH 2609.24), June 1986; or habitat above fish migration barriers known to provide reasonable enhancement opportunities for anadromous fish.

Class II: Streams with resident fish populations and generally steep (6-15 percent) gradient (can also include streams from 0-6 percent gradient) where no anadromous fish occur, and otherwise not meeting Class I criteria. These populations have limited fisheries values and generally occur upstream of migration barriers or have other habitat features that preclude anadromous or adfluvial fish use.



Class III: Perennial and intermittent streams with no fish populations, but which have sufficient flow or transport sufficient sediment and debris to have an immediate influence on downstream water quality or fish habitat capability. These streams generally have bankfull widths greater than 5 feet and are highly incised into the surrounding hillslope.

Class IV: Other intermittent, ephemeral, and small perennial channels with insufficient flow or sediment transport capabilities to have an immediate influence on downstream water quality or fish habitat capability. These streams generally are shallowly incised into the surrounding hillslope.

Non-streams: Rills and other watercourses, generally intermittent and less than 1 foot in bankfull width, little or no incision into the surrounding hillslope, and with little or no evidence of scour.

This stream classification system will be incorporated as an update to the Region 10 Aquatic Habitat Management Handbook. The addition of the Class IV and Non-streams classification categories should not change existing stream protection requirements contained in existing timber sale contract provisions and the BMP handbook. These new stream class categories will result in more accurate delineation of streams in the field (BMP 13.3), and more uniform and objective implementation of stream channel protection measures (BMP 13.16). The standards and guidelines associated with the classification system will be developed through the Forest Plan revision processes. Questions of whether or not a buffer is needed on certain Class III streams will be resolved through Forest Plan revisions, project level decision documents, and associated NEPA documents. Specific riparian and stream protection measures will be established through the Forest Plan revisions or amendments, project level NEPA analyses and decision documents.

Minimum Statutory Stream Buffers

Section 103(a) of TTRA added a new subsection (e) to section 705 of ANILCA, which reads as follows:

"In order to assure protection of riparian habitat, the Secretary shall maintain a buffer zone of no less than one hundred feet in width on each side of all Class I streams in the Tongass National Forest, and on those Class II streams which flow directly into a Class I stream, within which commercial timber harvesting shall be prohibited . . . The Secretary shall use best management practices, as defined in the Region 10 Soil and Water Conservation Handbook (FSH 2509.22), January 1990, to assure the protection of riparian habitat on streams or portions of streams not protected by such buffer zones. For the purposes of this subsection, the terms 'Class I streams' and 'Class II streams' mean the same as they do in the Region 10 Aquatic Habitat Management Handbook (FSH 2609.24), June 1986"

Since passage of TTRA, Forest Supervisors have been responsible for implementing these requirements. Much has been learned by each Tongass Area, and this has served us well in developing a standard Tongass-wide definition for ". . . flow directly into . . ." that is both practicable and effective in implementing TTRA. This Tongass-wide definition will be an important component for revising the Tongass Land Management Plan, as well as responding to recommendations contained in the Anadromous Fish Habitat Assessment Report.

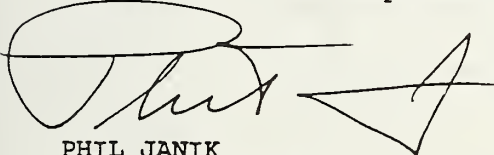
The following definition is provided for implementing TTRA section 103 (a) on the Tongass National Forest:

All Class II branches of a Class II stream, that flow into a Class I stream without a mapable intervening Class III, Class IV, or nonstream segment, will be considered part of the Class II stream which " . . . flow directly into . . . " the Class I stream.

Mandatory minimum 100 foot buffers will not apply to: 1) A Class II stream that flows directly into the ocean, or joins a Class I stream only at lower than mean high tide; and 2) A Class II stream segment that flows into a mapable Class III, Class IV, or nonstream segment that in turn flows into a Class I stream. These two instances clearly do not " . . . flow directly into . . . " a Class I stream. See Exhibit 1 for a diagram displaying these scenarios.

On all Class III streams, class IV streams, non-streams, and those Class II streams or segments which do not " . . . flow directly into . . . " a Class I stream, provisions of the Alaska Region Best Management Practices (BMP's) in the Regional Soil and Water Conservation Handbook (FSH 2509.22), as well as provisions of the Regional Aquatic Habitat Management Handbook (FSH 2609.24) apply to ensure riparian protection. These handbooks provide for field level professional judgement regarding whether to prescribe variable buffer widths for individual streams, beyond the minimum buffers required by TTRA section 103(a), in order to meet our fish habitat and water quality goals.

It is our intent to not significantly impact ongoing work. Therefore, for projects where the NEPA process has begun, the clarified definition and classification guidance appearing above should be phased in where applicable to the extent practicable and consistent with avoiding significant disruption or delay of the NEPA and project implementation processes. Where the NEPA process has been completed and a Decision Notice has or has not been signed, this guidance is not expected to be incorporated beyond what has been addressed in the completed NEPA document.



PHIL JANIK
Regional Forester

Enclosure

cc:

WO, WLFRRP

WO, WSA

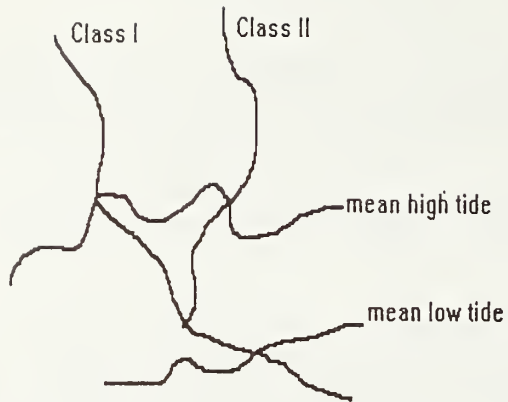
F.Everest, Juneau FSL

TLMP

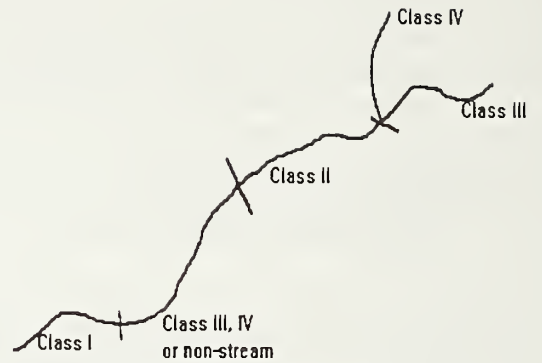
R.Maynard, OGC

951016 0845 WFEW 2620 CHC

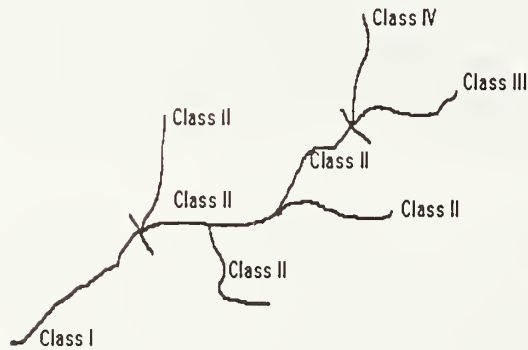
Exhibit 1



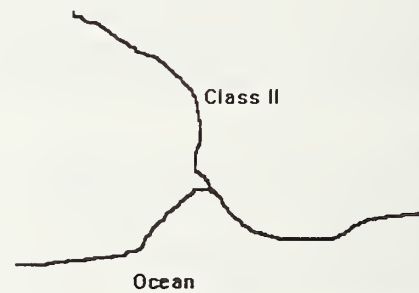
Case 1: TTRA buffer is not applied to the Class II stream.



Case 2: TTRA buffer is not applied to the Class II stream



Case 3: TTRA buffers are applied to the entire Class II stream network



Case 4: TTRA buffer is not applied to the Class II stream

INTRODUCTION

The purpose of this report is to complete the process of project analysis for the Northwest Baranof Timber Sale. This report describes a scientific analysis of the impacts on fisheries and water resources. Included are the procedures used to evaluate the resource effects data and the inherent relationships. The analysis is based upon the relationship of sediment production and delivery capability of landforms and soil types to streamflow, water quality, and anadromous fish habitat. Other potential water quality effects associated with timber harvest activities, including stream temperature, dissolved nutrients, and large woody debris retention, are also analyzed. The area of analysis includes VCU 290 - Nesmeni Point, VCU 289 - Deadman Reach, VCU 288 - Range Creek, VCU 287 - Fish Bay, VCU 302 - St. John Baptist Bay, VCU 300 - Noxon Creek, VCU 291 - Duffield Peninsula, VCU 292 - Rodman Bay. This report is the scientific and analytic basis for comparing each alternative and evaluating the impacts of the proposed management activities upon the water resource in the project area. As such, it is intended to be used for deriving sound resource management decisions.

PROCEDURE

Sediment Delivery and Transport Potential for Timber Units and Road Segments.

A systematic correlation of surface erosion potential to adjacent stream channels for the Project Area is described in this document. This approach is a modification of that developed by Hogan and Wilford, 1989. The timber harvest units and road segments are evaluated by their relationship to soil hazard mapping units in the GIS database.

The GIS output consists of the following:

1. Timber Unit/Sediment Delivery Rating
 - a. Timber units
 - b. Soil - high and extreme hazard units (MM Haz = 3 and 4)
 - c. All Class I, II and III streams
2. Road Segment/Sediment Delivery Rating
 - a. Road segments, with identifying number and color coded for soil unit
 - b. Soil hazard units for moderate (2), high (3), extreme (4)
 - c. Class I, II, and III streams.

The 1:12000 ortho photo maps and resource aerial photos with the timber units and road units inscribed are also utilized in this procedure.

RATING PROCEDURE

The timber unit polygons and the road segments are evaluated for their sediment delivery potential to the nearest stream. The stream's capacity to transport sediment downstream to the nearest Class I stream, or, if the nearest stream is a Class I, its capacity to store or transport sediment, is also evaluated. Sediment delivery classes and sediment transport classes are described below.

Sediment Delivery Classes

- | | |
|---------|--|
| Class 1 | Very low levels of sediment delivery. The polygon does not border or intercept any stream channel. A very broad valley flat or low relief terrain effectively disconnects the potential sediment source and the channel. |
| Class 2 | Low levels of sediment delivery. The polygon is separated from all streams by a wide valley floor or low relief terrain (floor width >5 channel bankfull widths). Only minor amounts (<10%) of the potential sediment eroded will reach the channel. |
| Class 3 | Medium levels of sediment delivery. The polygon is separated from streams by a medium sized valley flat or low relief terrain (valley flat is 3-5 channel bankfull widths), but other terrain features (gullies, rills, small streams) may transfer low, but measurable amounts (10-30%), of the potentially eroded sediment to the channel. |
| Class 4 | High levels of sediment delivery. The polygon is separated from the stream channel by a narrow valley flat or low relief terrain (valley flat <3 channel bankfull widths), but other terrain features (rills, small streams) will deliver much (30-70%) of the potentially eroded sediment to the channel. |
| Class 5 | Very high levels of sediment delivery. The polygon directly borders a stream channel. The terrain is steep and all sediment produced will be delivered to the channel. There is no valley flat. Sediment is directly connected to the channel. All potential sediment (70-100%) will enter the channel. |

Sediment Transport Classes

- | | |
|---------|---|
| Class 1 | Very low levels of sediment throughput. Low gradient channels (<1.0%), very wide valley flat (> 5 bankfull widths). Lakes are present. These channels store sediment.
Channel Types: ES4, ES3, ES2, PA1, PA2, PA3, PA4, PA5, GO3 |
| Class 2 | Moderate level of sediment throughput. Few large sediment sinks (lakes are small). Channel gradients are 1.0-2.0% with channel bars present. Valley flat is 3-5 bankfull widths.
Channel Types: FP2, FP4, FP5, GO1, GO2, GO5 |

- Class 3 High level of sediment throughput. Channel gradient is 2.0-6.0% with minor localized low gradient sections. Channel deposits are less extensive and the valley floor is confined (1-3 bankfull widths).
Channel Types: MM1, MM2, MC1, MC2, AF1, AF2, LC1, LC2, GO4
- Class 4 Very high level of sediment throughput. Steep channels (>6%) with no channel deposits or valley flat.
Channel Types: HC1, HC2, HC3, HC4, HC5, HC6, HC8, HC9, MC3, AF8

Timber units and road segments are evaluated with the above classes and by their proximity to Class I, II and III streams and to soil hazard units.
(Table 1.)

Table 1. Examples of Sediment Delivery and Transport Ratings

<u>Timber/ Road Unit</u>	<u>Soil Hazard Unit</u>	<u>Sediment Delivery to Class I</u>	<u>Sediment Transport in Class I</u>	<u>Sediment Delivery to Cl. II/III</u>	<u>Sediment Transport to Class I</u>	<u>Sediment Del. to Saltwater</u>
7539/388	3	2	1	---	---	---
75392/319	3	---	---	5	4	---

The sediment delivery and transport ratings are dependent upon several factors:

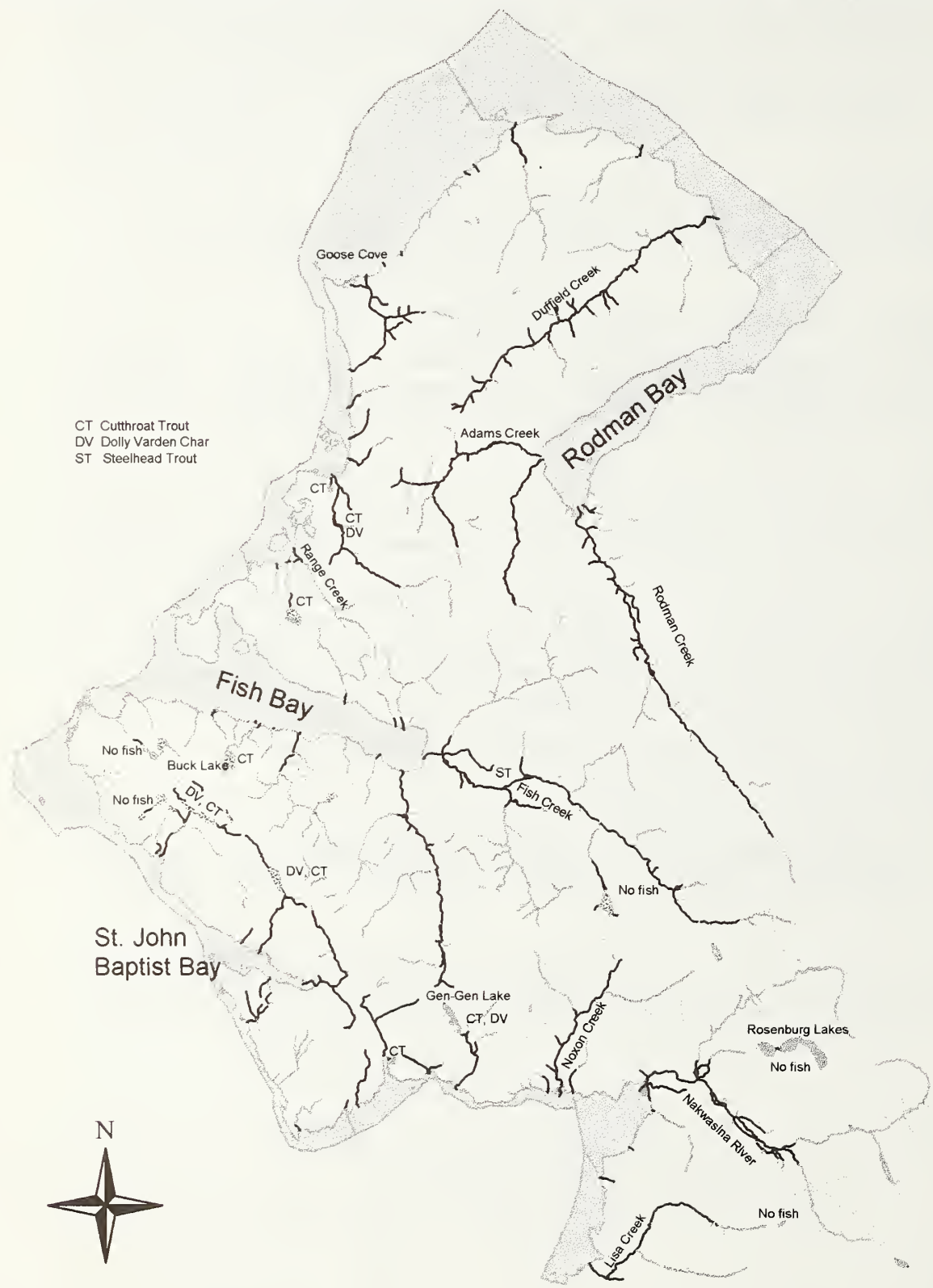
1. Proximity of timber or road unit to soil hazard unit (if a road segment was not near a soil hazard unit it was not evaluated)
2. Position of timber or road unit within a soil hazard unit (if a road was positioned at the bottom of soil hazard unit, its delivery potential is lower than if positioned mid-slope)
3. Channel type associated
4. Topographic features: landtype, steepness of terrain
5. Minimum road length for analysis is 330 ft.
6. Minimum unit size for analysis is 1 acre.

The evaluations were compiled by Daniel Kelliher, Hydrologist, with 17 years experience. The data are stored in an Oracle database with the FWWE (Fish, Wildlife, Watershed and Ecology) unit.

The scientific approach used in this analysis is described in "A Sediment Hazard Classification System: Linking Erosion to Fish Habitat," by D.L. Hogan and D.J. Wilford, as published in Proceedings of Watershed '89, March 1989. The data are summarized in Tables 2-7.

Northwest Baranof Project Area

Streams, Lakes and Recreational Fishing Opportunities



Appendix J

Public Involvement Activities

Appendix J

Public Involvement Activities

Table J-1
Public Involvement and Scoping

March 11, 1993	Meeting with ADF&G Subsistence Division, Douglas
June 18, 1993	Meeting with DGC, ADF&G, TLMP, Department of Labor, and USFS regarding subsistence issues
July 12, 1993	Notice of Intent (NOI) published in the <i>Federal Register</i> announcing decision to initiate an EIS for the project.
July 16, 1993	Scoping document providing information and seeking public comment mailed to approximately 400 individuals and groups that had previously shown interest in Forest Service projects in Southeast Alaska. Mailing list includes federal and State agencies and divisions, Native and municipal offices, businesses, organizations, groups, and individuals.
July 20, 1993	Meeting with Mark Jacobs, Jr. (representing the Southeast Native Subsistence Commission)
July 27, 1993	Meeting with SENSC and ADF&G Subsistence Division; and meeting with ADF&G Wildlife Division
August 10, 1993	Meeting with Angoon Community Association
September 28, 29, and 30, 1993	Meetings with Fish and Game Advisory Committee
October 5, 1993	Letters to Lavina Jack (Angoon ANS), Marlene Zuboff (Angoon Community Association), and Matthew Fred (Angoon ANB), from Gordon Anderson. Follow-up from meetings in Angoon.
October 20, 1993	Phone call to Daniel Johnson (ANB Grand Camp President) from Cindy Hartmann regarding scheduling of presentation to ANB Grand Camp Convention.
November 8 - 12, 1993	ANB/ANS Grand Camp Convention in Angoon, including presentations by Forest Service.
December 15, 1993	Meeting with Carol Hale, USFWS
December 15 - 16, 1993	Southeast Native Subsistence Commission Meeting in Juneau, including presentation on Northwest Baranof Project
December 22, 1993	Letter from Ron Williams (ANB Grand Camp President) to Michael Barton (Regional Forester, USFS) thanking USFS for participation at ANB/ANS Convention November 8th.
December 14, 1993	Second document mailed summarizing significant issues derived from initial public comment. Document also outlined tentative alternatives to be analyzed in the Draft EIS.

January 5, 1994	Meeting with Lorraine Marshall, Alaska Division of Governmental Coordination regarding coordination of comments from State.
January 10, 1994	Meeting with ADF&G Wildlife Division
March 21, 1994	Meeting with Fish and Game Advisory Committee, ADF&G Subsistence Division, and USFS regarding subsistence rankings for areas within the Northwest Baranof Project Area
March 25, 1994	Meeting with ADF&G Habitat, Wildlife Conservation, and Subsistence Division personnel; Mike Perenovich (USFS retired) and Loyal Johnson (ADF&G retired)
August 26, 1994	Two-page scoping ad published in the <i>Sitka Daily Sentinel</i> . Ad included details regarding the revised proposed action and purpose and need, and announced public open house dates, times, and locations. Copies of the ad were mailed to the same individuals and groups that received the initial mailing in July 1993.
August 31, 1994	Revised NOI published in the <i>Federal Register</i> describing changes to the proposed action and purpose and need.
September 21, 1994	Public Open House in Sitka. Two-page scoping ad published in the <i>Daily Sentinel</i> .
September 29, 1994	Public Open House in Angoon; presentation at Angoon High School
October 6, 1994	Public Open House in Sitka.
October 11, 1994	Meeting with Sitka Rotary
October 12, 1994	Meeting with US Fish and Wildlife Service, Alaska Department of Fish and Game, and USFS to discuss project status and coordination.
November 1, 1994	Meeting with Alaska Fish and Game Advisory Committee
May 24, 1995	Meeting with Sitka Assembly, Friends of Southeast's Future, and USFS
August 18, 1995	Notice of Availability (NOA) published in the <i>Federal Register</i> announcing availability of the Draft EIS and beginning of the public comment period
September 11, 1995	Public Open House and Subsistence Hearing on Draft EIS, ANB Hall, Sitka
September 27, 1995	Public Open House and Subsistence Hearing on Draft EIS, Centennial Building, Sitka
October 16, 1995	End of comment period on Draft EIS

Table J-2
Consultation with Sitka Tribe of Alaska

April 13, 1993	Rachel Myron met with STA Cultural Committee to discuss archeological perspective of Northwest Baranof Project Area.
May 3, 1993	Letter to STA requesting meeting with Tribal Council
May 19, 1993	Meeting with STA Tribal Council
May 20, 1993	Letter to Lawrence Widmark from Gordon Anderson. Follow-up to meeting with Tribal Council.
June 23, 1993	Meeting with STA Tribal Council
October 1, 1993	Letter to Terry Pegues from Gordon Anderson following up on meetings of May 17 and June 23, 1993
May 17, 1994	Meeting with STA Subsistence Committee, attorney, and Council members
September 6, 1994	Letter to STA regarding reinitiation of Northwest Baranof Scoping
September 20, 1994	Ray Nielson and Cindy Hartmann discuss Northwest Baranof scoping and set up meeting with STA Subsistence Committee
September 22, 1994	Phone call to Terry Pegues (STA) to set up meeting between Northwest Baranof ID Team and STA Cultural Committee
September 27, 1994	Meeting with STA Subsistence Committee
November 25, 1994	Letter from Jude Pate (STA) to Cindy Hartmann. Follow-up from visit with Tribe
January 10, 1995	Meeting with STA Tribal Council and interested others
January 12, 1995	Phone call from Terry Pegues to Rachel Myron regarding Heritage Resources report for Northwest Baranof
January 12, 1995	Letter to STA from Jim Franzel. Follow up from meeting January 10.
January 24, 1995	Phone call from Terry Pegues to Rachel Myron regarding cost estimate for reconnaissance trips (USFS and STA)
January 27, 1995	Letter to Ted Wright from Jim Franzel regarding cost estimates for reconnaissance trips
March 1, 1995	Letter to ANB/ANS Presidents from Jim Franzel regarding USFS organizational changes and future coordination
March 1, 1995	Letter to Ted Wright from Jim Franzel regarding USFS organizational changes and future coordination
March 23, 1995	Phone call to Terry Pegues from Rachel Myron requesting meeting with regarding Northwest Baranof EIS (Heritage Resources information for Chapters 3 and 4)
April 12, 1995	Letter to Ted Wright from Rachel Myron. Follow up from meeting April 7 with Terry Pegues and Jude Pate

April 30, 1995	Draft Tribal Environmental Impact Statement for Northwest Baranof from STA to USFS, discussing subsistence and cultural values and Native allotments in the Project Area.
May 18, 1995	Phone call from Rachel Myron to Terry Pegues requesting formal consultation regarding Northwest Baranof heritage resource effects analysis.
June 16, 1995	Consultation meeting with STA.
June 22, 1995	Phone call from Terry Pegues to Rachel Myron regarding consultation meeting on Northwest Baranof.

Appendix K

Comment Letters

Appendix K - Comment Letters

This appendix includes all comment letters received from the public on the Northwest Baranof Draft EIS during the 59-day public comment period. We have responded to the comments using the following procedure:

- We read through all of the letters and marked lines in each defining key comments.
- We grouped the comments into categories and responded to each comment in Appendix L.
- We annotated each comment letter with the corresponding response in Appendix L.

The following people or organizations provided comments. The authors' initials (in parenthesis) correspond to the initials following each of the comments in Appendix L, Response to Public Comments.

State of Alaska, Department of Environmental Conservation (DEC)
Southeast Alaska Conservation Council (SEACC)
Department of the Army, U.S. Army Engineer District, Alaska (ACOE)
Ketchikan Pulp Corporation (KPC)
Anonymous
State of Alaska, Department of Fish and Game (ADF&G)
Sitka Fish and Game Advisory Committee (SFGAC)
Department of Natural Resources, Division of Parks and Outdoor Recreation (DNR)
Alaska Wilderness Recreation & Tourism Association (AWRTA)
Bradley Arnold (BA)
Linda Behnken (LB1)
Robert Bruce Bennett (RBB)
Barbara Bingham, Raven's Fire, Incorporated (BB)
Sonia Birkeland (SB)
Michael McIntosh, The Boat Company, Ltd. (MM)
Michael Bousson (MB2)
Laura Bower (LB2)
Mike Brown (MB1)
Natasha I. Calvin (NIC)
Jason Caputo (JC)
Greater Sitka Chamber of Commerce
W. Charles (WC)
Harry Chartier (HC)
Vern Culp (VC)
Amanda Cunningham (AC)
Mary Dalton (MHD)
Joe D'Arienzo (JDA)
Julie Anna Dyar (JAD)
Jane Eidler (JE)
Ronald Dick (RED)
Page Else (PE)
Mandy Evans (ME)
K. Ferguson (KF)
William Foster (WF)
The Foundation for the Protection of the Common People, Inc. (FPCP)
Fabiann Grutter (FG)
Marie Claire Grutter (MCG)
Theo Grutter (TG)

Theresa Helem (TH)
Jason Herman (JH)
Mark Jacobs, Jr. (MJJ)
Claire Johnson (CJ)
Clarice Johnson (CAJ)
Noel Johnson, Southeast Alaska Ocean Adventures (NJ)
Eric Jordan (EJ)
Nancy Knapp (NK)
Ron Kruger (RK)
Kathy Kyle (KK)
Ted Merkel (TM)
Bill Miller (BM)
Valorie Nelson (VLN)
Foy Nevers (FJN)
Mike Nichols (MN)
Paul Post (PP)
Robert Reid (RR)
John Rivers (JWR)
Richard Rogers (RER)
Laura Schmidt (LS)
Lee Schmidt (LMS)
Andrew Scorzelli (AS)
Florian Sever (FS)
Patricia Sever (PS)
City and Borough of Sitka (C&BS)
Sitka Conservation Society (SCS)
Sitka State Parks Citizens Advisory Board (SPAB)
Sitka Tribe of Alaska (STA)
Steve Stringham, Wildwatch Consulting (SFS)
Mike Svenson (MS)
John Vallie (JCV)
Ann Vallion (AV)
Roger Vallion (RV)
Martina Vurzer (MV)
Kermit Whittemore (KW)
Dixie Wick (DMW)
Charles Wilber (CEW)
Chris Wilbur (CW)
George Woodbury (GSW)
United States Environmental Protection Agency, Region 10 (EPA)
USDI Fish and Wildlife Service (USDI)
Tongass Hunting and Fishing Coalition (THFC)

MEMORANDUM

State of Alaska
Department of Environmental Conservation

TO: Christine Valentine
OMB-DGC

DATE: October 25, 1995

FILE NO: AK9508-10JJ

THRU: Jim Ferguson
Team Leader, Forestry Services

FROM: Kevin J. Hanley *KJH*
Environmental Specialist
Division of Air and Water Quality

TELEPHONE NO: 465-5365

SUBJECT: Northwest Baranof Timber Sale DEIS
Preliminary ACMP and 319 Comments

Per the memo from Lisa Weissler, DGC to Project Reviewers, dated 9/7/95, the Department of Environmental Conservation is providing preliminary ACMP and Clean Water Act Section 319 consistency comments for the Northwest Baranof Timber Sale. Due to the uncertainty about the State review process, and the lack of information (per our request) about this sale, these comments should be considered to be the Department's preliminary comments, pending resolution of the consistency determination issue, and the receipt of additional information.

ACMP COMMENTS

1. ADEC can not conduct a meaningful analysis of the Forest Service's finding that this project is consistent with the ACMP, primarily for two reasons:

- 1) Mitigation measures were not identified. Under "Mitigation" on page 2-24, the Forest Service states that: *"We will identify specific mitigation measures to reduce or eliminate adverse effects in the Northwest Baranof Project Area at the time the Record of Decision (ROD) is signed."*
- 2) Many of the units have received little or no field review by specialists looking at issues of concern to ADEC. For example, of the 107 units proposed under Alternative 2, only 31 (29%) have been examined by a fisheries biologist. While it is true that not every unit requires field review by a fisheries biologist, the unit cards for the following 11 units indicate that unmapped Class I or Class II fish habitat potentially occurs within or immediately adjacent to the units and requires field verification by a fisheries biologist: 1171, 1172, 1173, 1211, 1252, 1275, 2042, 2043, 3041, 6218, and 9031. Similarly, Units 1144, 1145, and 1146 were not field reviewed by a soil scientist, although according to the unit cards, such a review is needed to address concerns for slope stability, especially in Units 1144 and 1146.

As the inclusion of fish habitat or inoperable areas within these units will no doubt require modifications to the unit configurations to accommodate the necessary buffers and slope stability concerns, they can only be considered conceptual at this time and, therefore, not ready for a consistency determination. AS 41.17.060(b)(1) requires that *"to the maximum extent possible, all applicable data and information of applicable disciplines shall be updated and used in making decisions relative to the management of forest resources."* Consequently, until

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Christine Valentine

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comprehensive interdisciplinary field reviews are completed for all units, a reasonable consistency determination cannot be made.

2. 73831S and 7558 Roads:

As depicted on the road card maps, the 73831S and 7558 roads substantially encroach upon and traverse through Class I stream buffers. However, there is no mention of or rationale given for this in the respective road card narratives. As with most of the road cards, the Fisheries reports state "See hydrology for remarks," yet the Hydrology reports provide no remarks. 11 AAC 95.285(b) states "A road may not be located in a riparian area except where access is needed to a water body crossing, or where there is no feasible alternative." The elimination of substantial portions of 100-foot wide Class I stream buffers for right-of-way clearing is significant, and the rationale for doing so must be clearly stated in the EIS. If not already done, alternative alignments which avoid these buffers altogether must be investigated prior to development of the FEIS and ROD.

3. Road Maintenance Levels and Standards for Closure:

Per the State Forest Practices Regulations for road closure, the Forest Service must demonstrate that road maintenance and closure methods used for maintenance level I roads meet or exceed the standards of 11 AAC 95.320.

CWA SECTION 319 COMMENTS

1. Monitoring: Under "Effectiveness Monitoring" (Appendix A, page 11), will any elements of the 1995 Chatham Area Effectiveness Monitoring Strategy (4/26/95) be incorporated into the monitoring objectives for this project?

2. Class III Stream Buffers: Blowdown of Class III stream buffers presents a concern for impacts to water quality and fish habitat within the Northwest Baranof project area. According to the unit cards, several units border high gradient contained Class III streams (HC6 channel types) that are directly tributary to Class I or Class II fish habitat and are proposed for no-cut slope break buffers. These include: Units 1271, 1275, and 1252 which occur adjacent to one another along the same west-northwest slope and are separated by two buffered Class III streams (on either side of Unit 1275); Unit 3132 which occurs adjacent to a Class III V-notch that is identified on the unit card as having "extreme soil mass movement hazard;" Units 3142 & 3143, 6291 & 6282, and 6332 & 6333, which are separated from one another, respectively, by buffered Class III HC6 channels; and Unit 6341 which occurs adjacent to a Class III HC6 channel that forms its northern boundary.

Given their positions on the landscape, these types of buffers are often highly susceptible to blowing down into the streams they were designed to protect. Such blowdown can result in substantial and chronic sediment delivery to downstream fish habitat from upturned rootwads and destabilized stream banks and sideslopes. Rather than retaining "hard edge" no-cut buffers, these buffers should be selectively harvested to remove the most wind-prone trees (those of larger diameter with high, dense crowns extending above the slope break) while retaining all smaller diameter non-merchantable trees with short, open crowns that are generally most windfirm. This

Christine Valentine

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is especially important for Class III slope break buffers that are retained between adjacent clearcut units such as those prescribed between Units 1271, 1275, & 1252; 3142 & 3143; 6291 & 6282; and 6332 & 6333.

We appreciate the opportunity to comment.

cc: Mike Conway, ADEC
Len Verrelli, ADEC
Lana Shea, ADF&G
Dave Hardy, ADF&G
Jim McAllister, ADNRR
Gary Morrison, USFS
Jim Franzel, USFS
James Thomas, USFS
Randy Coleman, USFS
Chris Meade, USEPA
Wayne Elson, USEPA

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Southeast Alaska Conservation Council

SEACC 419 Sixth Street, Suite 328 Juneau, AK 99801
(907) 586-6942 phone (907) 463-3312 fax



James M. Thomas
Planning Team Leader
USDA Forest Service - Sitka Ranger District
204 Signaka Way
Sitka, AK 99835

Dear Mr. Thomas:

The following comments are submitted on behalf of the Southeast Alaska Conservation Council (SEACC) on the draft environmental impact statement (DEIS) for the Northwest Baranof timber sale(s). SEACC is a grassroots coalition of 15 volunteer citizen conservation groups in 12 Southeast Alaska communities, including Sitka.

We are very troubled by the quality of this document. It fails to adequately analyze the cumulative impacts of this project to fish and wildlife resources, and their commercial, subsistence, and recreational uses, from other ongoing or approved projects adjacent to this project area. What little analysis is contained in the DEIS is simply too generalized to meaningfully inform the public or the decision maker of the environmental impacts from proceeding with this proposal.

We are particularly concerned that this DEIS fails to adequately address or respond to significant issues such as fallowdown, highgrading, and providing healthy populations of fish and wildlife for subsistence, sport, and commercial users. These issues are so fundamental to managing the Tongass for the long-term benefit of all forest users that the Forest Service must address them when developing timber sale projects like the Northwest Baranof project. Postponing meaningful disclosure or consideration of these issues until another draft TLMF revision is released violates NEPA, ANILCA and the TTRA. Therefore, a supplemental DEIS for this sale(s) is necessary.

A. The DEIS Does Not Adequately Address Sustainable Logging As Required By 42 U.S.C. Section 4332(2)(C)(iv) Because It Does Not Discuss Or Discuss Fallowdown.

In order to "fulfill the responsibilities of each generation as trustee of the environment for succeeding generations," NEPA requires the Forest Service to disclose and discuss "the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity." 42 U.S.C. 4332(2)(C)(iv). In the context of proposing additional clearcutting in an area which has already been subjected to extensive clearcutting, the issue of sustainable logging embodies the maintenance of long-term productivity consistent with this purpose. The Forest Service must comply with the procedural obligation of disclosing complete and accurate information and a reasonable discussion concerning the issue of sustainability in every logging project DEIS. Such disclosure and discussion is absent from the Northwest Baranof DEIS.

The absence of such an analysis is particularly troubling in this DEIS given the consistent pattern of data, analysis, and experience relating to fallowdown previously identified in the Chatham Area, and elsewhere on the Tongass. The Forest Service has finally tried to confront this issue in the draft supplement to the

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SEAK SOCIETY OF AMERICAN FOREST DWELLERS, Point Baker • ALASKANS FOR JUNEAU • CHICAGO OF CONSERVATION COUNCIL, Tenakee Springs
FRIENDS OF BERNERS BAY, Juneau • FRIENDS OF GLACIER BAY, Gustavus • LYNN CANAL CONSERVATION, Haines
NARROWS CONSERVATION COUNCIL, Petersburg • PELICAN FORESTRY COUNCIL • PRINCE OF WALES CONSERVATION LEAGUE, Craig
SEAK SOCIETY OF AMERICAN FOREST DWELLERS, Juneau • SITKA CONSERVATION SOCIETY • SITKA CONSERVATION SOCIETY, Juneau • TONGASS CONSERVATION SOCIETY, Ketchikan
TERRA CLUB, Juneau • SITKA RESOURCE COUNCIL • YAKUTAT RESOURCE CONSERVATION COUNCIL

SEACC comments on NW Baranof DEIS
October 16, 1995
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Central Prince of Wales timber sale, although it still evades the crucial issue that arises from understanding fallowdown: given that significant fallowdown exists between planned timber volumes and the volumes actually logged, past and planned logging under the Ketchikan Pulp contract is unsustainable. Likewise, existing but undisclosed information on the Chatham and Sitka Areas regarding fallowdown, lead us to the conclusion that past logging under the former Alaska Pulp contract was also unsustainable.

The analysis prepared by The Island Group (TIG) in 1992 demonstrated that a 28 percent reduction in planned volumes occurred during planning for the Kelp Bay sale, a former Alaska Pulp long-term contract offering, directly adjacent to this project area. See TIG Report at 37. Fallowdown was carefully measured for the Kelp Bay sale.

"[D]uring the Kelp Bay planning, there was 11-12% difference between [the TLMF timber database] and a check on aerial photography. Next in the field the ID team further reduced the area in the sale units by 16%, from 14,172 acres to 11,967 acres through a field investigation of 25-35% of the tentatively suitable acres. These experiences show that tentatively suitable acres are aptly named. This is because forest-wide databases cannot possible (sic) include sufficient spatial resolution to account for all of the site-specific factors that affect harvesting decisions."

Id. at 90.¹ This information was not disclosed or discussed in the DEIS.

In addition, this DEIS failed to disclose or discuss the actual amount of fallowdown between acres planned and approved for past Alaska pulp logging sales within or adjacent to the project area and the number of acres actually logged by Alaska Pulp. This information is critical for the public and Forest Service to consider the probable environmental impacts from this proposed timber sale and make a reasoned decision.

The DEIS fails to disclose how big a reduction in planned volumes occurred during planning for this project. Did this project IDT discover discrepancies similar to those found by the Kelp Bay IDT between the TLMF timber database and aerial photographs or during field investigation? The DEIS states (at p. 2-8): "Each potential unit and road was discussed and potential resource concerns identified." Was every unit surveyed on the ground by resource specialists? Although the DEIS alludes to the development of a Multi-Entry Layout Plan (at p. 2-8), as required by the 1983 Alaska Regional Guide, the results of this MELP were not identified nor a full explanation provided for any discrepancy found between actual and planned availability of suitable timber.

We recommend that the supplemental DEIS fully address this issue.

B. The Forest Service Relied On An Arbitrary And Capricious Procedure For Calculating Proportionality For This DEIS.

The DEIS states (at p. 4-33) that although the procedure used by the planning team for calculating proportionality for this sale "has been successfully challenged in court" (and found to be arbitrary and

See also, Letter from Dr. K. Norman Johnson to William R. Shoaf (Sept. 17, 1994) (recommending that the Tongass National Forest develop realistic estimates of sustainable logging levels by lowering forest plan estimates). We request that this attached letter be incorporated into the planning record for this sale.

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capriciously), alternative methodologies "are not available at this time." This statement is inconsistent with the fact that two reports were completed and released this spring on alternative methods of determining proportionality. The only item "not available at this time" is a management agency willing, or able, to manage the Tongass for the benefit of all users.

The first report, Evaluation of Photo-Point Inventory Methods for the Estimation of Timber Volume and Proportionality in Southeast Alaska, is a scientific evaluation of 4 different methods for determining proportionality. The report was completed in April of 1995. The second report, Alternatives To Using The Timber Type Map For Determining Proportionality Under The Tongass Timber Reform Act, is a May 23, 1995 summary of the first report, and a recommended direction for implementing Section 301(c)(2) of the Tongass Timber Reform Act on the Tongass. Comments on these reports prepared by the Alaska Chapter of The Wildlife Society were submitted on June 28, 1995 by the Sierra Club Legal Defense Fund on behalf of its clients, plaintiffs in three ongoing cases on the Tongass, including SEACC. We request that these reports and the comments by The Wildlife Society be incorporated into the planning record for the Northwest Baranof project.²

As stated in those comments, we agree with the first report's conclusion that "method C is probably advisable since photo measurements can be made with higher precision without substantially increasing cost." The DEIS fails to disclose the alternative methodologies or apply the best available approach, Method C, which was recommended in this report. The Forest Service must apply the recommended alternative to the TIMTYP methodology for this sale to successfully halt biggrading as mandated by Congress in the Tongass Timber Reform Act. Achieving proportionality in the Northwest Baranof project area is also essential for the conservation of highly productive wildlife habitat.

C. The Forest Service's Willingness To Modify HCAs May Threaten The Wildlife That HCAs Are Supposed To Protect.

Currently, the Forest Service does not have a comprehensive plan to protect the wildlife that Alaskans rely on for hunting, guiding, subsistence, tourism, and personal use. A panel of national wildlife experts that peer-reviewed the May 1993 Proposed Strategy by the interagency viable wildlife committee in 1994. Although the peer review gave the Committee's draft strategy "big marks", they concluded that the draft strategy did not go far enough. In particular, the peer reviewers were "very concerned" that while additional work is under way "immediate" steps be implemented to preserve important landscape level options. In response to the peer review, the Committee made some "immediate" recommendations designed to preserve planning options pending completion of the TLMP revision. The Forest Service then prepared a draft amendment to the TLMP which did not disclose the Committee's recommendations or provide a reasonable explanation for why they were not considered. SEACC submitted comments on

²A copy of the referenced comments are attached for your convenience. We also requested these comments to be incorporated into Eight Fatbom timber sale(s) planning record (Sept. 19, 1995) but did not attach a copy to those comments. Please incorporate a copy of the enclosed comments into the Eight Fatbom planning record.

the draft TLMP amendment to the Regional Forester on December 15, 1994. We ask that those comments be incorporated into this planning record.³

Given the importance of maintaining healthy populations of wildlife for the long-term benefit of all Tongass users, the short (2 page) discussion in Chapter 2 of the DEIS is sadly inadequate. Important information necessary for the decision maker and public to make an informed decision is not disclosed or analyzed. For example, no analysis is provided that reasonably explains how the HCAs identified in the DEIS are consistent with the conclusions of all the wildlife experts who have reviewed the proposed HCA strategy; particularly the recommendation that proposed HCAs be expanded in the interim pending adoption of a comprehensive strategy. The Forest Service further fails to identify any reasoned basis for not following the experts' recommendations.

The large HCA identified in the 1993 Proposed Strategy in VCU's 287, 300 and 302 includes the peninsula in VCU 302, which is bordered by St. John Baptist Bay to the north and Neva Strait. The DEIS fails to offer any reasoned explanation for why this proposed HCA was modified in the DEIS, or how well this modified HCA fulfills the criteria identified by the experts. For example, does the modified HCA include a sufficient amount of productive old-growth acres within its boundaries?

The absence of an old-growth block analysis in the DEIS prevents the Forest Service from conducting an adequate assessment of habitat capability. This analysis should be provided in a supplemental DEIS.

No meaningful analysis is presented regarding wildlife corridors in the DEIS. Corridors on the Tongass must be designed with full consideration of the topography that they cover. According to the VPOF Committee, corridors should follow contours at lower elevations. Some corridors were identified in conjunction with the corridors provided by beach fringe and estuary buffers, stream and lake buffers, and other areas not scheduled for logging. The Forest Service did not disclose or discuss how the area's topography was taken into account. Without this information, or a reasoned explanation for not expanding corridors along the beach fringe as recommended by the experts, the public can not make an informed decision regarding this project's potential impacts to wildlife.

Finally, this DEIS fails to follow existing management direction in the TLMP (1979, as amended in 1986) by failing to identify retention areas. Although we believe recent scientific evidence and analysis completely discredit this outdated wildlife conservation strategy, the efforts by the Alaska delegation to restrict new wildlife management options makes identifying such retention areas even more important. Such an analysis would serve to inform Congress, the public, and the decision maker of the risks from continuing to manage wildlife under the retention strategy contained in the current TLMP, as amended. The supplemental DEIS should provide a comprehensive comparison between the retention and HCA strategies.

³A copy of these comments are attached for your convenience. We also requested these comments to be incorporated into Eight Fatbom timber sale(s) planning record (Sept. 19, 1995) but did not attach a copy to those comments. Please incorporate a copy of the enclosed comments into the Eight Fatbom planning record. We also request that a copy of the attached Petition with Request For Stay, dated June 24, 1994, be incorporated into the planning records for this project, as well as the Eight Fatbom timber sale(s) project.

D. The DEIS Fails To Disclose Or Follow Recommended Measures To Adequately Conserve Fish Species In The Project Area.

In January 1995, the Forest Service and Pacific Northwest Research Station submitted a report to Congress entitled the Anadromous Fish Habitat Assessment. The report concluded that "[c]urrent practices on the Tongass do not meet either the goal of the Tongass Land Management Plan to 'preserve the biological productivity of every fish stream on the Tongass,' or the long-term goal of avoiding the possible need for listing of salmon and steelhead stocks under the Endangered Species Act."

Remarkably, neither the existence of this report, its conclusions, or recommendations were disclosed in the DEIS. Yet the DEIS claims (at p. 4-18) that "Best Management Practices (BMPs) and the use of buffer zones are likely to assure the protection of riparian and potential fish habitat." What information supports this statement? Although the Anadromous Fish Habitat Assessment concludes "that providing for more anadromous fish habitat protection on the Tongass is necessary and practicable," no evidence is revealed in the DEIS that such measures were examined or proposed for this project or an explanation provided for not doing so.

The "likely to assure protection of riparian and potential fish habitat" standard referenced in the DEIS (at p. 4-18) fails to satisfy the requirements of law. NFMA explicitly states that the Forest Service must "insure" that logging on the Tongass does not "seriously and adversely affect water conditions or fish habitat." 16 U.S.C. Sec. 1604(g)(3)(E)(iii). AFHA has established that the 100-foot riparian buffers, the minimum required under the TTRA, do not adequately protect fish on the Tongass. Accordingly, NFMA compels the full implementation of habitat protection measures to ensure that sufficient riparian habitat is maintained during and after logging operations.

In conjunction with NFMA, the Forest Service must also meet the requirements of the Alaska Coastal Management Plan (ACMP) which requires that fish and wildlife protection on federal lands be no less than that provided on state lands. Under the state Forest Practices Act (FPA), which is incorporated into the ACMP, there can be no degradation of important fish and wildlife habitat within 300 feet of a fish stream. Thus, the Forest Service has a legal obligation to manage riparian zones consistent with the ACMP and FPA, and the alternatives considered for this project should be developed accordingly.

Finally, no information is provided in the DEIS about any watershed analysis conducted for this project. The AFHA recommended immediately implementing watershed analysis using the concepts presented in A Federal Agency Guide for Pilot Watershed Analysis (1994) before implementing logging or roading activities that could significantly influence fish habitat. See AFHA, Appendix C, at 39. A reasoned analysis must be provided for not following these expert recommendations.

F. The Proposed ANILCA Findings Are Arbitrary and Capricious.

First off, the standard used by the Forest Service is unlawful. A finding that proposed activities "may" restrict subsistence is what the law requires. See, e.g., *Kunakama v. Clark*, 742 F.2d 1145, 1151 (9th Cir. 1984). The heightened standard used by the Forest Service, "a significant possibility of a significant restriction," is contrary to Ninth Circuit precedent and Congressional intent. Although the heightened standard makes no meaningful difference with respect to deer, it may effect findings regarding other fish and wildlife species, such as salmon.

The Anadromous Fish Habitat Assessment found that "procedures similar to those currently used to protect fish habitat on the Tongass ... failed to prevent declines in fish habitat capability, and resulted in increasing and now significant risk to the viability of salmon and steelhead stocks" Because the DEIS failed to disclose and analyze this important report, the Forest Service fails to provide a reasoned explanation for its contrary finding (at p. 4-49) that "immediate and foreseeable effects on the abundance and distribution of salmon for subsistence uses in the Project Area would not be measurable."

The DEIS's finding that the significant possibility of a significant restriction of deer is necessary because "no alternative would meet TLMF objectives" is arbitrary and capricious. The 1979 TLMF did not consider impacts to subsistence because at the time it was released Section 810 of ANILCA had not been enacted as law. Tying to a plan that ignores subsistence to justify restrictions to subsistence can only be described as bullheaded. Moreover, the Tongass Timber Reform Act did not direct the Forest Service to meet market demand for timber regardless of the costs to other resources and their users, but only to the extent that it can do so consistent with multiple use objectives and sustained yield, and only to the extent it can do so within the confines of all "other applicable law," including Section 810 of ANILCA. Consequently, the Forest Service can no longer elevate logging, under an outdated forest plan, over other statutory requirements.

Because all the action alternatives result in a significant restriction of subsistence harvesting of deer, the Forest Service has also failed to present a range of alternatives which allows the public to meaningfully compare their effects on subsistence. Thus, the Forest Service has not presented an alternative that uses the minimum amount of public lands necessary or takes reasonable steps to minimize impacts upon subsistence, as required by Section 810 of ANILCA and NEPA.

G. Information and Analysis Regarding Impacts to Karst and Cave Resources is Inadequate.

The DEIS fails to provide sufficient information for us to determine whether adequate steps were taken to identify and protect significant karst resources. Did the Forest Service conduct field reconnaissance of all units for karst? Did the Forest Service conduct a vulnerability analysis for impacts to identified karst topography?

Thank you for considering these comments.

Sincerely,

Buck Lindékugel
Buck Lindékugel
Conservation Director

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DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, ALASKA
P.O. BOX 898
ANCHORAGE, ALASKA 99506-0898

ATTENTION OF

OCTOBER 16 1995

Regulatory Branch
Project Evaluation Section - South

Reference: 1950

Gary Morrison
Forest Supervisor
Tongass National Forest
Chatham Area
204 Siginaka Way
Sitka, Alaska 99835

Dear Mr. Morrison:

The following comments are submitted on behalf of the Alaska District, U.S. Army Corps of Engineers (Corps), in regards to the Northwest Baranof Timber Sales's "Draft Environmental Impact Statement" (DEIS), referenced in your September 14, 1995 letter to reviewers.

Our comments have been limited to those pursuant to our regulatory authority, Section 10 of the Rivers and Harbor's Act of 1899 and Section 404 of the Clean Water Act (CWA). I have referenced the chapter, page, topic, and paragraph within the DEIS, followed by my comment to assist your consideration of the comment.

2-20, Barge LTF - "Barge LTFs are expensive to construct and operate".

Comment: A consideration of the Corps during our Section 404(b)(1), CWA analysis is that of "practicable alternatives". Except as provided under 404(b)(2), no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences.

Since some of the Log Transfer Facility (LTF) locations or type-of-LTF decisions are based upon economic factors which have not been provided within the DEIS in other than general statements, I would suggest an appendix to include basic economic data such as barge ramp construction and log transfer cost/HBF, compared to the alternatives. In addition, other logging costs/HBF could be provided in the appendix. Reasons for non-use of existing and previously authorized LTF facilities should be provided. This information would greatly assist our determination of whether all practicable alternatives have been considered.

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3-15, Wetlands, end of 1st paragraph - "Section 404(f)(1)(A) and (E) of the Federal Clean Water Act specifically exempts silviculture, timber harvesting, and related road construction activities from permit requirements for the discharge of dredge and fill material in wetlands (USDA Forest Service 1991)".

Comment: The above comment is correct. However, other activities involving construction on wetlands, such as construction of a land-based logging camp or landfill, etc., something not silviculturally related would require a permit from the DA.

Potential LTF sites that were considered during scoping, but were discounted for various reasons should be discussed, including the reasons they were eliminated.

Please review the attachment to this letter for comments provided earlier to your office (11/15/94). Some of the referenced information has not been addressed within the draft document. The information requested may facilitate quicker Corps' authorization of the LTFs and other project components.

Sequencing of events (a. through k.), shown on pages 3 and 4 of the Attachment describes a procedure that may facilitate the National Environmental Policy Act process between our agencies and result in quicker permitting for those project portions requiring Corps authorization. This joint procedure may negate duplication of efforts on your part, in the event the proposed project becomes controversial.

Please contact me at your earliest convenience at (907)753-2724 to discuss this possibility. If a decision is made to proceed with the joint procedure, the Corps will provide a draft Section 404(b)(1) analysis and draft public notice for inclusion in the next DEIS.

Thank you for the opportunity to provide comments on the DEIS at this time.

Sincerely,

Houston L. Hannafous

Houston L. Hannafous
Project Manager
Project Evaluation Section - South

Enclosure

K-6

ATTACHMENT

U.S. ARMY CORPS OF ENGINEERS INVOLVEMENT IN THE DEVELOPMENT OF THE NORTHWEST BARANOF & PORT HOUGHTON/CAPE FANSHAW EISA

Impacts to waters of the United States (U.S.), including wetlands, should be a major consideration during National Environmental Policy Act (NEPA) documentation for the proposed projects. Section 404 of the Clean Water Act (33 U.S.C. 1344) authorizes the Secretary of the Army, acting through the Corps of Engineers (Corps), to issue permits for the discharge of dredged or fill material into waters of the U.S., including wetlands. Selection and use of fill sites must be in accordance with the Section 404(b)(1) Guidelines, which were developed by the Environmental Protection Agency in conjunction with the Department of the Army (DA) and are published in 40 CFR Part 230. In addition, Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) prohibits the obstruction or alteration of navigable waters of the U.S. without a DA permit.

The 404(b)(1) Guidelines state that no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences. In those cases where the activity associated with a discharge is proposed for a "special aquatic site", such as wetlands, mudflats, or vegetated shallows, practicable alternatives are presumed to exist unless clearly demonstrated otherwise. The burden is on the applicant to provide a discussion of practicable alternatives. An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purpose.

The proposed projects may require one or more log transfer facilities (LTFs). LTFs, by their nature, are located in navigable waters and require a Section 10 permit. They also often involve fill in waters of the U.S., thereby requiring a Section 404 permit. Floating logging camps would require a Section 10 permit. Land-based camps would require a Section 404 permit if constructed in wetlands. Forest roads are generally exempt provided they comply with the best management practices stated at 33 CFR 323.4(a)(6)(i-xv) to assure recapture will not occur. Other logging-related activities that may require a DA permit include boat ramps, docks, log booms, buoys, water intake lines, et cetera.

Pursuant to NEPA, the Corps incorporates an environmental assessment into its evaluation of DA permit applications. In order to eliminate duplication, it is the Corps' policy to accept and adopt, to the maximum extent legally permissible, another Federal agency's environmental documentation for compliance with NEPA. To expedite the DA permitting process, we recommend that the following information be discussed in your NEPA documentation:

a. All LTF sites initially considered. Include new sites as well as existing LTFs in the area. Provide the rationale for removing any sites from further consideration. For feasible alternatives, describe the resources likely to be affected, including the marine environment and

substrate. This should include any information on dive surveys that have been conducted. Information regarding conformance with the Alaska Timber Taskforce Guidelines would be particularly useful. Also include a discussion of all log entry methods (ramp, A-frame, crane, continuous chain, etc.) considered for the LTFs and the environmental consequences of each. As with the sites, identify the rationale for removing any entry methods from further consideration. For each feasible log entry method, discuss the amount of fill likely to be required, the potential for bark discharge, and any tradeoffs between the two that may have been considered. The following additional information should also be provided for LTFs:

- (1) Anticipated frequency of use. Will the LTF only be used during certain months of the year? Will it be used continuously or only for a few days at a time when a raft is being formed or when a ship is to be loaded? If so, how often will that be? What is the expected life of the facility. Will it be idle for any periods during that time?
- (2) Length of time logs will be stored in water.
- (3) Fate of the facility. Upon completion of operations, will the LTF will be left in an operational state, removed, mothballed, converted to a recreational boat ramp, or other?
- (4) Average volume of timber anticipated to be transferred (board feet, Scribner scale) per year.
- (5) Will the facility have a contiguous log storage or sorting yard?
- (6) A site plan with discharge points indicated and the names of all receiving waters (fresh and marine).
- (7) Bathymetric data for receiving waters showing depth contours to at least 60 feet below Mean Lower Low Water.
 - b. Depict the location of any floatcamps. Also any other fills, structures, or features located in navigable waters of the U.S., e.g., dolphins, floating docks, buoys, waterlines, cables, log booms, etc. The high tide line and the mean high water elevations should be clearly depicted for any such activities.
 - c. Identify any other impacts on wetlands which result from the discharge of dredged or fill material. (Impacts which would result from road, camp, or other construction activities.) Include details of the wetland determination, including who made it and whether or not they used the EPA/Corps accepted method of delineation. The limits of impacted wetlands within the proposed project area should be clearly delineated.
 - d. Provide information which demonstrates those actions that would be taken to minimize impacts to wetlands and waters of the U.S.
 - e. Provide information which demonstrates compliance with the baseline provisions (best management practices) as stated at 33 CFR 323.4(a)(6)(i-xv) for exempted activities (such as roads), to assure recapture will not take place.

- f. Provide any known information regarding the discharge into waters of the U.S. of dredged or fill material which may contain any toxic pollutant listed under section 307 of the Clean Water Act.
- g. Provide any information concerning the discharge of dredged or fill material which may result in significant discernible alterations to flow or circulation, or reduction to the reach of waters of the U.S.
- h. Provide any information concerning excavation in wetlands or waters of the U.S. which would have more than de minimus effects on surrounding or upslope wetlands or waters of the U.S.
Sequencing of events and/or information that will facilitate the NEPA process between our agencies is as follows:
 - a. The Corps will participate in initial scoping coordination, either in writing or by attending necessary meetings.
 - b. The Forest Service will provide the Corps with a copy of any report produced as a result of site visits with or by other agencies.
 - c. The Corps will assign a file number and waterway number to the proposed project and confirm any jurisdictional determinations).
 - d. The Forest Service will provide a preliminary draft environment impact statement (PDEIS) and preferred LTR site(s) and log entry method. (A draft permit application is required for preparation of the Corps public notice. In the event that a draft application can not be prepared by the Forest Service, the Corps will prepare a special public notice. This special notice would clarify the Corps' involvement in the NEPA process and its intent to utilize that process as a basis for decisionmaking once the expected DA application is received. This special notice may be combined with the Notice of Availability of the DEIS.)
 - e. The Corps will provide a draft Section 404(b)(1) analysis (optional) and draft public notice for inclusion in DEIS appendices.
 - f. The Forest Service will provide a preliminary final environment impact statement (FEIS).
 - g. The Forest Service will provide a discussion of their compliance with E.O. 11990, Protection of Wetlands. This should be more than a simple statement.
 - h. The Corps will provide a draft Section 404(b)(1) analysis (although it may be updated) and final public notice for inclusion in FEIS appendices. The Corps will publish its final public notice concurrently with the FEIS.
 - i. Once the environmental document is approved for public distribution it would be distributed or made available to those on the Corps and Forest Service mailing lists as appropriate. While not required, the Corps would sign the DEIS if requested. The Corps signature would indicate that the Corps has reviewed the NEPA document and found it sufficiently addresses NEPA and Section 404 requirements for the purposes of public comment and receiving public input. The signature would not mean that the Corps endorses the preferred alternative.

- j. The Corps will accept the NEPA documentation to the maximum degree legally possible.
- k. The Corps will prepare a record of decision within 45 days of the date of the FEIS (unless the comment period for the public notice is extended or a public hearing is granted).
- i. Once the environmental document is approved for public distribution it would be distributed or made available to those on the Corps and Forest Service mailing lists as appropriate. While not required, the Corps would sign the DEIS if requested. The Corps signature would indicate that the Corps has reviewed the NEPA document and found it sufficiently addresses NEPA and Section 404 requirements for the purposes of public comment and receiving public input. The signature would not mean that the Corps endorses the preferred alternative.
- j. The Corps will accept the NEPA documentation to the maximum degree legally possible.
- k. The Corps will prepare a record of decision within 45 days of the date of the FEIS (unless the comment period for the public notice is extended or a public hearing is granted).



Post Office Box 6600
Ketchikan, Alaska 99901
U.S.A.
TEL 907225-2161
FAX 907225-8760
October 16, 1995

Mr. James Thomas
Team Leader
USDA Forest Service
Sitka Ranger District
204 Siginaka Way
Sitka, Alaska 99835

Re: Comments for the Draft Northwest Baranof EIS

Dear Mr. Thomas:

Ketchikan Pulp Company (KPC) encourages you to modify an alternative in this project to help meet the desired future condition of the Northwest Baranof Area to meet the existing Management Direction/Emphasis for each Management Area in the current Forest Plan (TLMF 1979, as amended). There is also a need to modify an existing alternative to contribute to the obligation set by Congress under Section 101 of the Tongass Timber Reform Act (TTRA) 1990, directing the Forest Service "to the extent consistent with providing for multiple use and sustained yield of all renewable forest resources, seek to provide a supply of timber from the Tongass National Forest which meets annual market demand..."

Our reasons for recommending a modification to an existing alternative are outlined below.

1. The proposed action is to harvest 30-100 mm³ of timber from the Northwest Baranof Area. KPC believes Alternative #4 comes the closest to achieving the maximum target of 100 mm³, but is still under by 30 mm³.

MD 465
95 OCT 16
NW 29

OPERATING DIVISIONS
WARD COVE PULP MILL
TONGUE RIVER LOG
KETCHIKAN SAWMILL
TONGUE RIVER LOG
ANNETTE HENDRICK SAWMILL
EL CAPITAN LOG

TL511.A95

Mr. James Thomas
October 16, 1995
Page 2

2. The proposed action to harvest 30-100 mm³ of timber from the Northwest Baranof Area can increase the deer usage of the areas clear-cut now, by later pre-commercially thinning, and eventually commercially thinning according to a study conducted by Enserch Environmental Corporation for the Forest Service in August of 1994. (See enclosure.)

3. The proposed action to harvest 30-100 mm³ of timber from the Northwest Baranof Area should include economically feasible volume.

Thank you for the opportunity to comment.

Sincerely,

Kent P. Nicholson
Contract Manager

KPN:ak
cc: O. J. Graham

Northwest Baranof Draft Environmental Impact Statement

MEMORANDUM

State of Alaska
Department of Environmental Conservation

TO: Christine Valentine
OMB-DGC

DATE: October 12, 1995

FILE NO: AK9508-10JJ

TELEPHONE NO: 465-5365

SUBJECT: NW Baranof Timber Sale DEIS
NEPA Comments

THRU:
FROM: Jim Ferguson *Jim F*
Team Leader, Forestry Services
Division of Air and Water Quality

Comment Form

The USDA Forest Service is obtaining public comments on the Northwest Baranof Draft Environmental Impact Statement. You may use as many of these forms as necessary to provide written comments on the draft EIS. Please deliver or mail it to the Forest Service. Comments will be accepted until 5 PM on October 2, 1995.

Chapter 4 pg 34 no threat as to effect expected
part 3 pg 32 no discussion of 40 acres in 68 no distress
in page 34 chap 4 your dismissal of threatened or endangered species displays class A raw log. The problem of salmon listed in Washington is a direct result of loss of habitat once the habitat is gone. and the salmon listed then what all you be able to do? Protection of upper stream class III necessary to prevent silting & larger buffer strips needed to prevent blow down.

in pg 22 (chart 3) what branch of the forest service collects and biopsies fish? I think this erroneous statement of "no distress" is coming from out of sight out of mind mentality. In Sekiu, Wash. fish with tumors have brought to the attention of fish & wildlife dept and ignored, later barrels of herbicide were found upstream but never was there official recognition of the problem except that they were quick to get rid of the evidence, when painted out the barrels were removed.

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Signaka Way
Sitka, Alaska 99835

Per the memo from Lisa Weissler, DGC to Project Reviewers, dated 9/7/95, the Department of Environmental Conservation is providing NEPA comments for the Northwest Baranof Timber Sale. Due to the uncertainty about the State review process, and the lack of information (per our request) about this sale, these comments should be considered to be the Department's preliminary comments, pending resolution of the consistency determination issue, and the receipt of additional information.

NEPA COMMENTS

1. Current or Baseline Watershed Conditions in the Project Area: The only discussion of current watershed conditions in the project area that was useful to us was the discussion of past activities, found on pages 3-21 to 22. It would be helpful if the soils section (3-7 to 9) and the section on natural disturbances (3-12 to 13) included watershed-specific discussions of soil hazard ratings, landslides, and windthrow, as opposed to general discussions of what the issues are.

Also note that the current marine conditions displayed on pages 3-69, as well as the impacts analysis on page 4-12, should be updated, as new dives have been completed by the Fish and Wildlife Service.

2. There is no map provided that depicts the name of each watershed in the project area. We would appreciate such a map, since watersheds are referred to by name in the text, and not all watershed names can be inferred from the information provided in the text.

3. On page 4-8 (Environmental Consequences: Vegetation): The Affected Environment: Vegetation section included a discussion of wind and landslides as important factors. These factors are not discussed in the Environmental Consequences section. We would like to see a discussion of the consequences of and mitigation proposed to address these factors, both at the broad project level, and at the site-specific level (unit and road cards).

4. We would like to note the following figures for Alternative 2, based on the tables on pages 4-6, 4-15 and 4-16:

—49% of the total harvest is on MML 3 soils

- 20% of the total harvest (40% of the harvest on Mm1 3) has direct sediment delivery potential.
- 14% of the total harvest (29% of the harvest on Mm1 3) has indirect sediment delivery potential.

We would like to see the "ratings" that were discussed in the text. The discussion provided notes the *relative* risk of the different alternatives, but does not provide conclusions on the *absolute* level of risk that is being accepted for each alternative. We would appreciate that such a discussion be included in the FEIS, at least for the preferred alternative and ROD.

5. We note that there are 27 Class I stream crossings for 31.6 miles of spec road. Relative to other timber sales, this number, on a per-mile basis, is large. Were there other alternative road locations (or alternatives such a helicopter yarding) considered that would lower the number of crossings?

6. We would appreciate a discussion of the amount of road construction and timber harvest in riparian areas (pages 4-13 and 14), in light of the Regional Forester's decision to implement recommendations in the Anadromous Fish Habitat Assessment (AFHA). For example, what decision criteria were used to allow activities in riparian areas?

7. Were any watersheds in the project area considered for designation as "reference" watersheds and, if so, which?

8. Are any watershed restoration projects being proposed for the project area? The discussion on pages 3-21 to 22 alludes to such projects, but we would appreciate a more complete listing and discussion.

We appreciate the opportunity to comment.

cc: Mike Conway, ADEC
Len Verrilli, ADEC
Lana Shea, ADF&G
Dave Hardy, ADF&G
Jim McAllister, ADNRR
Gary Morrison, USFS
Jim Franzel, USFS
James Thomas, USFS
Randy Coleman, USFS
Chris Meade, USEPA
Wayne Elson, USEPA

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cleared by 1160

Author: NRCPDASYSM, Alaska (Robert Palmer) at CCMH51
 Date: 8/28/95 9:38 AM
 Priority: Normal
 TO: CHRISTINE VALENTINE at Gov_Juneau_DGC
 Subject: NW Baranof Timber Sale

Appendix Contents

The Division of Land has reviewed the NW Baranof Timber Sale DEIS and has the following comments. The Forest Service is considering tan sites for log transfer facilities, of those ten they only have DNR permits for one (Applatoon Cove). They have not applied for any of the other sites as of this date. They have submitted an ANILCA 906(x) concurrence request for a road that would cross state selected land on Lifianski Peninsula, ADL 106086, but we have not processed that application yet.

We recommend that the USFS limit the number of LTAs to the minimum possible and use barges where economically feasible. The development of previously used sites would appear to have the least amount of impact except for those sites that are clearly not consistent with LTFA siting guidelines, such as Fish Bay. The DWS assumes that the bulkheads will be removed at the end of the sale. We encourage the USFS to remove the bulkheads and return the beach to its original condition if the site is not expected to be used within 5-10 years.

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MEMORANDUM

State of Alaska

TO: Christine Valentine
DGC/OMB
Juneau

DATE: October 16, 1995
FAX NO: 747-6239
TELEPHONE NO: 747-5828

THRU:

FILE: AK 9508-101J

FROM: Dave Hardy
Area Habitat Biologist
Habitat & Restoration Division
Sitka Office

SUBJECT: Northwest Baranof
DEIS

The Alaska Department of Fish and Game (ADF&G) has reviewed the US Forest Service's (FS) Draft Environmental Impact Statement (DEIS) for the Northwest Baranof (NWB) project area. The information and recommendations contained herein are intended for use in the interagency development of a consolidated State response. We look forward to working with your office and other departments in developing that response.

We have provided detailed comments on the proposed sale at the scoping (April 6, 1994) and revised scoping phases (October 19, 1994). We include these earlier comments by reference into this response. The scoping comments contain a number of requests for information and analyses which were not presented in the DEIS. We would ask that the FS review these comments and revise the FEIS to better meet the identified information needs, especially for the ACMP review.

On the positive side the preferred alternative has a lower volume and acreage than the originally proposed action, reflecting the problems with much of the unit pool as identified by FS field reviews, and the location and historic significance of the project area for Sitkans. We appreciate the inclusion of an alternative (alt 3) which is designed to minimize impacts to a wide range of resources and uses. We also found the discussion of social values (3-78 and 79) to be an excellent analysis which captures the significant local issue embodied in the two recent Sitka ballot questions about logging.

On the other hand, we found the overall tone and content of the document to be disturbing. It includes many broad or sweeping analyses which are characterized by often inaccurate or misleading statements. For some reason this DEIS has moved away from clear site specific information and analyses to a more generic approach. For example the wildlife habitat discussion includes pages of "habitat capability" model analyses but no species distribution or sensitive habitat maps for goats, deer, brown bear etc. so that the public could see how the FS believed the roads and units in the proposed alternatives related to important wildlife values.

Memo to Christine Valentine
Re: Northwest Baranof DEIS
File: AK 9508-101J

October 16, 1995

In another example, a significant ecological factor of the project area is that all major drainages have been skidder logged in huge continuous clearcuts. This has had obvious and long lasting effects on residual timber volume, accessibility, fish and wildlife habitat, human use, etc. as we discussed in our scoping comments. The FS has a great deal of information on the effects of the past harvest, both general and site specific to the project area. The bulk of this information was not presented in the DEIS, nor were the existing conditions and cumulative effects explained in an accurate and cogent manner. This approach seems to us to be in direct contradiction of the intent of NEPA.

ACMP Consistency

The FS has included a proposed consistency determination for this DEIS, although the "decisions to be made" section (p1-4) emphasizes that the DEIS is NOT a decision document. Until the listed decisions on roads, units, etc. are made, the applicant cannot adequately describe the project to ACMP reviewers, pursuant to both federal and state ACMP statutes and regulations. The FS description of the project as the sum of all components of all alternatives has been determined to be inadequate by DGC. Therefore we have been directed to review this as a normal DEIS review and not as a conclusive consistency determination.

We refer the FS to the 8/15/95 letter from DGC which asked the FS to "reissue the consistency determinations (for NWB and 8 Fathom) to meet the requirements of 15 CFR 930.30...and with an evaluation of sale activities using the attached State enforceable policies." Although the requested information was described by DGC as "necessary for the state to determine whether we agree or disagree with the FS consistency determination", the analysis in the DEIS does not include it. We recommend that this be remedied in the FEIS.

We also refer the FS to the CB Sitka's scoping comments on the relationship of the proposed project to the SCMP. Portions of those comments are referenced in the DEIS p 4-69 regarding recreational and subsistence values in the Nakwasina/Noxon creeks area.

We would ask that the FS review our scoping comments on the information needed in the road and unit cards, and improve them to a more acceptable standard. For some reason they do not adequately reflect the amount of effort we know has been spent on ground truthing the roads and units in this area. More data is needed about harvest and road building in important wildlife habitats such as beach and estuary fringe before we can make a recommendation on ACMP consistency. Please refer to our scoping comments for more detail. In particular the road and unit cards should be upgraded to the standard agreed to between the state and FS in the CPOW and North Revilla timber sales. A significant improvement would be to match the Campbell timber sale cards as referenced in our scoping comments.

Preferred Alternative

The preferred alternative proposes to harvest substantial volume in the high Sitka value, high use areas along Nakwasina, Neva and St John the Baptist Bay, as do alternatives 1 and 4. Alternative 3, however is the action alternative which the DEIS describes as having the least impact on essentially every important value, including deer harvest (4-46), riparian habitat (4-13), roads (4-16), recreation (4-67), land status (4-80), visual (4-73), valuable wildlife habitats (beach fringe, estuary fringe, riparian, old growth) p4-20, and fish (4-18), etc.. Of especial importance to the ADF&G and the residents of Sitka is

that alternative 3 focusses timber harvest in that portion of the planning area farthest away from the community. This approach was followed in the Kelp Bay timber sale, and was determined by the FS to be both appropriate and successful. We strongly recommend that Alternative 3 with modifications be adopted in the FEIS and ROD.

Because of the minimal information in the unit cards we cannot recommend which of the possible problem units listed in our scoping comments be dropped. However we will reevaluate these later as part of our ACMP recommendations based on the best available information in the resource reports and FEIS. Some potential problem units discussed in the text of the DEIS include 3143 (riparian habitat p4-13), and 5001 and 5002 (adjacent to the Big Bear/Baby Bear state parks selection). We will carefully evaluate roads and units in riparian areas, beach and estuary fringes, important wildlife habitats such as goat and deer winter range and travel corridors under our ACMP review of the FEIS.

ACMP and NEPA

General comments

For the reasons described in our scoping comments and discussed in the DEIS, we are pleased that the preferred alternative does not include timber harvest in the Nakwasina River and Noxon Creek drainages. We are also pleased that a large number of helicopter units and some alternative silviculture units are proposed. We are disappointed that clearcutting with removal of 85% or more of the timber in the units still accounts for a large proportion of the harvest but we hope that proportion decreases in future sales in the Chatham Area.

Unit Cards

A significant deficiency is the lack of wildlife information on the unit cards. The only references seem to be to eagle trees. Our scoping comments identified a number of units which we believed contained important wildlife habitat. We also asked that goat winter range in particular be examined for certain units. Unfortunately none of the requested information appeared in the unit cards. In another example, some units in the Rodman/Duffield are so close together they do not provide for old growth travel corridors between them, yet there is no mention of this on the unit cards. From the lack of wildlife comments and information it appears a wildlife biologist was not consulted during unit design. For an ACMP consistency review we will need information on which units are in high value habitats and what adjustments if any were made to units based on wildlife concerns. The unit cards also do not identify or address the special values of the 100 to 300 foot corridor adjacent to fish streams.

Specificity

A recurring problem throughout the document is its lack of specificity in terms of fish and wildlife habitats, and in documenting the information on which an ecological statement is based such as survey type and intensity. For example the available information on fish species and abundance are not displayed for streams and lakes in the project area other than the brief verbal description on p 3-42 under sport fishing and some general statements elsewhere. Although requested in our scoping comments, the intensity, number or reliability of surveys for goshawks was not described (4-33). The discussion on marbled murrelets says "no nests have been found in the project area" but includes no information on whether or if anyone looked for them. As discussed below, important wildlife habitat such as goat or

deer winter range was not mapped. Fish and wildlife species abundance, distribution, and sensitive habitats should be better described and mapped in the FEIS.

Maps

In general we find the alternative maps much improved over the maps provided for recent Chatham Area timber sales. The larger scale and inclusion of topographic lines on the alternative maps makes review of the project easier and makes landscape effects more evident. Unfortunately, many place names such as stream names referenced in the text are left off the map. Locations of all places referenced in the project narratives such as Noxon, Lisa, Adams creeks and Schulze Cove should be displayed on maps in the FEIS.

We also are disappointed that although requested in our scoping comments of April, 1994, p.10 there are no maps displaying important habitat for wildlife such as deer, bears, otter, marten, or mountain goats. This needs to be remedied in the FEIS. Such maps serve as an important analytical tool for the planners and public to assess spatial relationships and potential conflicts between planned activities and high value wildlife habitat. Similarly although retention acres are quantified in the DEIS, no attempt is made to map them as was done in past Chatham area timber sales.

Although the DEIS narrative claims only a few hundred volume class 6 acres are present, the existing condition map shows large expanses of high volume (>30 mbf/ac) timber in the project area. Is this an error?

Roads

Road location, construction, design and maintenance can have serious deleterious effects on water quality and fish and wildlife habitat. As documented in the DEIS p. 4-5.

"Road construction is one of the greatest contributors to management induced sediment production. Road failures, improper drainage, and erosion of the road surface and cut-and-fill slopes all contribute to sediment production. After a period of time, the majority of erodible soil material from the road surface will have been removed, the cutbanks and fillslopes will become vegetated, and surface erosion will become less serious. Road maintenance and the proper closeout of roads will help prevent road failures."

Further on pp. 3-19 and 3-20 the DEIS indicates:

"There are 112.3 total miles of existing road (including spur roads) in the Project Area. Of these, 77.8 miles are located within riparian habitat. Culvert and bridge failures have occurred along the roads in several VCU's resulting in sedimentation (e.g. Nakwasina River, Fish Bay, Adams Creek). Sedimentation is not a significant problem in most Northwest Baranof watersheds. Rodman Creek and Nakwasina River are listed on the EPA's Impaired Watershed List under the "Suspected" category, due primarily to riparian zone timber harvest which occurred in the past. Spawning gravel quality, fish habitat diversity, and channel stability have been impacted by previous riparian logging and road construction activities."

October 16, 1995

On page 4-52 the DEIS says "The FS has not maintained roads in the project area". Appendix A p. 3 and 4 describes Fisheries, Watershed, and Road Management Improvement Opportunities as follows:

"The following watersheds have had substantial harvest in riparian areas and are the highest priority for enhancement and improvement projects:

- 287 Fish Bay (lower part)
- 291 Duffield Creek
- 292 Rodman Creek and Adams Creek
- 299 Nakwasina River
- 300 Noxon Creek
- 301 Lisa Creek
- 302 St. John Baptist Bay Creek
- 312 Kallian River and Kallian Bay South Creek

Inventory work has been done for parts of some of these systems (Rodman Creek, Adams Creek, Fish Creek and Noxon Creek), however there has been no comprehensive inventory and assessment done. Additional watershed improvement needs inventory will be needed to identify site specific opportunities, establish priorities, and develop funding requirements.

In general fisheries and watershed rehabilitation work includes:

- Installing large woody debris structures,
- Riparian thinning in second-growth stands along Class I and II streams,
- Borrow pond excavation for coho rearing habitat, and
- Road Maintenance, including: drainage structure maintenance or removal on old roads near Class I and II streams, reconstruction of existing roads away from stream channels, _____ armoring on fill/cut slopes where runoff enters streams, replacement of culverts that are too small, and replacement of culverts which block fish access to Class I and II stream habitat."

Appendix D includes tables describing the Road Management Objectives (RMOs) for each road segment by alternative. These tables contain a number of technical terms, few of which are defined in the glossary. We recommend that the FEIS RMOs be prefaced by an introduction which clearly explains "road status, service life, service level, function class, post harvest maint. level" etc. in ways which both the technical and lay reader can understand.

A serious long term problem on the Tongass has been the lack of funding or program direction to adequately inspect and maintain roads which have not been closed out. These problems have been greatest for isolated areas not connected to a central road system such as the drainages listed above. FS NEPA documents have commonly downplayed this issue with assurances that regular maintenance will occur. By contrast the 1994 Ushk Bay FEIS (p. 1-10) addressed this as an important issue: "Efforts in the past by the Forest Service to maintain or abandon roads have raised concern for future road management plans. The consequences of constructing or abandoning roads without either "putting them

October 16, 1995

to bed" or implementing an effective and responsive maintenance program can be severe in terms of described erosion, fish passage blocks, and related problems." We agree and recommend the issue be addressed in the FEIS and appropriately addressed.

The applicable ACMP standards, the state Forest Practices Act (FPA) and regulations, provide clear and enforceable standards for road maintenance and closure. This ACMP consistency issue was resolved for Ushk Bay by FS affirmation to the state that 1. project roads would in fact be closed out in a manner which meets FS and state standards, and 2. once the road closure specifics had been worked out by FS field staff, the state would be provided an opportunity to review them on the ground before closure.

We would ask that the issue be clearly articulated in the FEIS and ROD, and the ACMP consistency addressed in the FS proposed consistency finding in a manner consistent with Ushk Bay. We would ask that this issue be addressed for all federal roads in the project area, including past harvest roads that have not yet been put to bed. The problem is becoming larger as the inventory of roads continues to expand on the Chatham Area. Please refer to the December 21, 1994, letter from Lorraine Marshall to Joe Costa pp 8 and 9 for further background on this issue.

The analysis of environmental consequences of roads p. 4-81 indicates that "In all cases drainage would be maintained to protect watershed resources". This statement is not supported by the existing situation or the analysis in Appendix A. In fact "bridge and culvert removal on old road systems" is described as an "opportunity for fishery habitat enhancement" in the DEIS p. 1-9.

Finally, for a number of systems, a significant problem has been LWD depletion. The FS has been unable to fix these problems because of funding and access problems and the lack of suitable logs for placement in the streams. The FEIS should describe this and related problems and specify where in the project area the opportunity provided by logging and roadbuilding will be used to rehabilitate roads and streams as discussed in Appendix A.

Floodplains and Riparian Areas
The discussion of this important habitat in the "Affected Environment" section is a classic example of the pervasive underlying problem with this DEIS. It consists of five pages of generic information, a table which breaks out the acreage of various types of wetlands by VCU, and a one paragraph description of the "present condition" which can at best be characterized as incomplete and uninformative of the reality of the present condition in the project area. Although the DEIS says (p3-14) "Table 3-4 displays the acreage and distribution by VCU of floodplains and wetlands in the NWP project area" it does not include floodplains, nor describe the proportion of floodplains, wetlands or riparian areas which have been impacted by harvest and roadbuilding.

A careful reading of the DEIS however, provides a few clues as to the magnitude of impacts, for example the proportion of road in riparian areas (77.8 out of 112.3 miles or 69%, pp3-19 and 3-20), and the habitat type change analysis on page 3-24. In the latter the DEIS says that 8,742 of the total of 15,053 acres of riparian habitat in the project area have been modified, it cleareut logged. This is 42% of the project area total, and is concentrated in the larger drainages.

The floodplains of these larger systems need large wood debris to control flows, stabilize the streams, and provide a diversity of habitats. Although the document p 3-14 lists 4,387 acres of floodplain habitat on the project area, we were unable to locate anywhere in the DEIS what proportion of floodplain acres have been logged. Based on our knowledge of the project area we believe the proportion is substantially in excess of 50% and probably greater than 75%.

Statements like "Most rivers and streams in the project area possess stream characteristics and channel morphology that reflect natural processes and show no apparent impact from past human activities." (p3-19) are typical and misleading. Most rivers show extensive impacts from past logging.

The discussion on the kind of logging which took place and its consequences is incomplete. The best analysis is on pp3-21 to 3-22, and it is inadequate at best. One sentence addresses the problems with skidder logging and streams, and that is confined to the discussion on Rodman Bay. The DEIS does not describe the common logging pattern of skidders yarding logs down or across streams, either rearing them out or diverting their flow to the skid trail. The discussion of silvicultural effects is poor as well, with the DEIS only indicating that 44 acres in VCU 291 (Duffield) and 346 acres in VCU 299 (Nakwasina) are less than adequately stocked. The Nakwasina stocking for the most part reflects the dense alder forest which has resulted from the excessive disturbance associated with skidder logging.

Similar extensive stands exist in Katlian from the same cause.

It is especially disturbing that the Fish Stream Condition and Large Woody Debris discussions on pp3-21 and 3-22 are so poor. It seems typical that the LWD portion consists of two generic paragraphs when the problems of LWD supply are significant for most of the larger drainages in the project area. As indicated in the Appendix A the FS has spent a fair amount of time and money to document these problems for some of the major drainages.

Cumulative effects on wildlife

The DEIS cumulative effects analysis on wildlife is inadequate. Effects are only displayed through 2008. For deer, the effects of second growth canopy closure 25-30 years after logging need to be shown. In contrast to the DEIS analysis, we believe these to be irreversible effects of the proposed action and will result in further declines in deer habitat capability.

The analysis does not include the effects of reasonably foreseeable future actions in the project area or in neighboring areas. Although the DEIS references a "landscape analysis" p.4-2 called the "West Baranof and Kruzof Analysis" no information or conclusions from that effort are presented, and it is not clear how that analysis will be used by the FS, other than to "identify areas suitable and available for timber harvest."

Subsistence hunters and other wildlife users need to know how reductions in wildlife in this project will be augmented in the future. If management proceeds toward the "desired future condition" of the project area, what will be the long term effect on wildlife populations? Other EISes, namely in the Ketchikan area do this analysis, why does the Chatham Area avoid it?

Mountain Goats

We are extremely disappointed that no maps showing goat range in the project area were included in the DEIS. There is also no reference to the goats or goat habitat on the Duffield Peninsula in the DEIS. In

our scoping comments of April 6, 1994 we listed units in VCUs 289 and 291 which appeared to be in goat habitat or winter range. At that time we also sent a map to the Forest Service showing goat habitat and winter range on north Baranof.

While we are pleased the preferred alternative does not log the Noxon Creek drainage, the DEIS discussion of effects on mountain goats does not adequately address our scoping comments and concerns. We continue to be concerned about units in the high country on Duffield Peninsula. We requested that field surveys be done to ascertain what the level of goat use is in the high country units on Duffield. The DEIS does not acknowledge that there are goats there, and wildlife comments on the cards for these units do not mention concerns about goats.

The DEIS analysis focusses on the goat habitat capability model instead of site specific habitat information. Although the models are useful planning tools, they should not be relied on to the exclusion of other information. Goats have been observed by ADF&G staff, local pilots and, we assume, FS staff on the ridges of the Duffield. Logging may have a detrimental effect on their habitat. The EIS needs to address this on a unit by unit site specific basis. Core goat range, especially winter range, is an important wildlife habitat issue for ACWMP consistency.

Deer

The DEIS states that deer habitat capability losses will be less than it portrays because not all harvest units will be clearcut. Unfortunately the DEIS analysis does not address other factors which may underestimate deer habitat losses. These include not extending the analysis out to the point when second growth canopy closure occurs, and not applying patch size factors to the deer model as suggested in our scoping comments. In addition, the preferred alternative has only 11 harvest units which cut as little as 50% or less of the timber in the unit. Six of those 11 units are 20 acres or less. Only 2 units are greater than 50 acres.

The proportion of this sale that uses alternatives to clearcutting that would be of any measurable benefit to deer is very small. The study which indicated some benefit to deer from timber harvest was done in a high volume stand (>30,000 bf/acre) which was still high volume after the removal of 40% of its basal area. Clearly it was an exceptional stand. We interpret the results to suggest that it is not what you remove from a stand during harvest but what remains after harvest that determines the value of the stand for deer. We agree with the Forest Service assessment that timber harvest "that use overstory removal should be undertaken with appropriate research, study, and monitoring of effects" (pg.4-21). We are consequently disappointed that this sale includes no proposed research, study, or monitoring of the effects of overstory removal, or other silvicultural techniques on wildlife or its habitat.

Similarly the discussions on thinning (appendix A-2.3) overstate the benefits of thinning for wildlife, based on the present understanding of the ecological conditions of thinned versus unthinned stands. Wildlife as opposed to silvicultural thinning has occurred only on a limited and experimental basis to date on the Chatham Area. It is expensive and requires additional handwork to pile or otherwise handle the slash to allow wildlife access to thinned stands.

Brown bear, marten

The narrative on pg. 3-41 does not agree with the data on table 3-18 which it refers to. Because the DEIS does not include the effects of roads, logging camps, and other development on brown bear and marten its analysis is inadequate. In sale after sale on the Chatham Area the Forest Service has failed to show the impact of roads on bears or martens. The habitat capability model includes means for quantitatively estimating the effect of road density on the marten habitat capability. Although many other timber EISes have included this analysis, the Northwest Baranof DEIS does not. Consequently, it likely greatly underestimates the effects of the action alternatives on marten.

The DEIS only makes a general statement that roads are detrimental to brown bears. The DEIS should have included quantitative estimates from the habitat capability model. We recommend that this analysis be conducted and reported in the FEIS. In addition to information the habitat capability model could provide, we recommend the FS access and use the hard data from northeast Chichagof Island that an extensive road system results in an increase in the number of nonhunting bear mortalities. Known nonhunting kills of brown bears on northeast Chichagof have averaged 3 to 4 annually the past few years. We recommend the FEIS better analyze and discuss the effects of development, including roads and units on bears and martens.

Conservation strategy and forest fragmentation

We are pleased that the DEIS defers timber harvest in areas proposed for HCAs. Unfortunately the DEIS analysis of conservation strategy or forest fragmentation for the project area and surrounding forest is not complete. A conservation strategy has to be more than delineating habitat conservation areas. The DEIS does not indicate how the HCAs would fit into a landscape strategy for neighboring areas or what the habitat connections would be between HCAs.

We recommend that the FEIS analyze what effects each alternative will have on forest fragmentation and viable wildlife populations. The FEIS should also better explain how the FS plans to maintain biodiversity and species viability through the rotation and at a minimum through the next sale planned for the area by addressing ecological questions such as these: Are the proposed HCAs adequate by themselves as a conservation strategy? What links between old growth blocks will exist after the implementation of each alternative? Do some alternatives foster greater forest fragmentation than others? The DEIS has no discussion of biodiversity, other than the statement on p. 4-29 that "the diversity of plant and animal species in the project area would not be affected by the proposed action".

Ecosystem Management

The discussion of Ecosystem management in chapter two beginning at p2-1 is incomplete and misleading as is the related discussion of desired future condition (DFC) on pp1-10 et seq. Although the DFC analysis is based on direction provided in TLMF and the AK Regional Guide, the DEIS does not adequately describe the long term consequences to the ecosystem of LUD III or LUD IV management for timber production. It does a poor job of pointing out the conflicts between ecosystem management and the timber production driven historic (and current) decision process.

Statements like those on p1-12 that "Hunting and fishing success and the availability of subsistence resources remains relatively constant over time with only periodic short term fluctuations" do not accurately reflect the long term consequences of managing for LUD III or IV conditions.

Proportionality

The Forest Service's method for determining proportional harvest of volume classes in this sale was ruled against in the Kelp Bay decision in April 1994. Yet in every timber sale project currently before us for review (Polk Inlet, Eight Fathom, Northwest Baranof, Lab Bay) the Forest Service has continued to use this method. The prime reason for mandating proportional harvest was to avoid disproportionately cutting the most important wildlife habitat early in the rotation thereby endangering biodiversity and reducing the yield of the wildlife resource unnecessarily early. The Forest Service needs to redo the Northwest Baranof analysis using a legal method for determining TTRA proportionality.

The Forest Service claims there are only eight acres of volume class 6 stands proposed for harvest in this project. However, timber volumes and acreage shown on unit cards suggest other stands with greater than 30,000 board feet/acre are in harvest units.

Timber Volumes

The document uses net sawlog volume (p2-12) to describe the timber harvest by alternatives. This does not allow the average reader to understand the likely effects of the sale. We recommend that the timber volume proposed for harvest be displayed as total volume (sawlog, pulp and utility), using the best available information and including ROW harvest. It seems contradictory that the economic portion of the document explains the demand for pulp at some length yet the sawlog volume figures were selected to be displayed.

Windthrow

The description of windthrow on p3-13 only references natural patterns of windthrow. The FEIS analysis should describe the unravelling of leave areas adjacent to clearcuts and roads through accelerated windthrow, and subsequent "salvage sales" which then result. It should also address windthrow and riparian habitat and what specifically will be done to reduce the problem. Since the language on salvage sales in the recent reversion bill eliminates many of the environmental processes and safeguards for logging salvage sales, the FEIS needs to acknowledge this, and emphasize blowdown reduction in final unit layout. Our experience has shown that the higher the proportion of trees removed in a partial cut, the greater the potential that residual trees will blow down.

Archaeology

The DEIS p4-77 describes the location of cultural resources in greater detail than in past NEPA documents. We recommend that this information be deleted from public disclosure in the FEIS, to avoid potential unauthorized excavation or vandalism.

Soils

Our scoping recommendations on soils and hazardous soils were not clearly or completely addressed in the DEIS. We recommend that this be remedied in the FEIS.

Recreational Fisheries

Please review our scoping comments on this issue. For the FEIS we recommend that the FS include better documentation of sportfish resources, uses and effects of past and proposed activities. We recommend that the FEIS list and quantify where information is available the fish species and uses occurring in each of the lakes, rivers and streams of the project area. We also recommend that the DEIS

better characterize past and potential future effects of logging on fish species and stocks of high recreational value.

For example the DEIS p4-18 says "We base the habitat capability models for coho salmon and Dolly Varden char on the amounts of LWD in the stream. With the application of BMPs and TTRA buffer strips we do not expect any quantifiable effects on coho salmon or Dolly Varden char in any alternative." No monitoring to assess "quantifiable effects" is currently listed to occur, nor does this statement indicate the number of variables which would need to be addressed to quantify effects on the listed species. The adverse effects of past valley bottom logging on LWD and species dependent on LWD is downplayed in the DEIS. These need to be rectified in the FEIS.

In the discussion on p4-64 the DEIS discusses potential increases in sportfish and hunting pressure resulting from new roads, especially in regard to the lake accessed from the road proposed for Schulze Cove. We agree and would like to work with the FS on road management objectives and uses.

Steelhead trout are the only species discussed in the two paragraph discussion of fishing under the Environmental consequences section, p4-49. We recommend that this discussion be expanded to include other limited species such as cutthroat trout. The FS should work with the SF division staff to better assess the available sport fish resources in the project area and the past and potential impacts.

The partial listing of sportfish resources on p3-42 should be expanded and mapped in the FEIS.

Threatened and Endangered
The discussion of T&E species addresses fish on p3-31 as follows: "There are no threatened, endangered or sensitive fish species known to occur in the NWB project area." We recommend that the basis for this statement be explained in greater detail in the FEIS.

Monitoring and Mitigation
The monitoring and mitigation measures section in Appendix A follows a long term FS trend; the monitoring primarily references normal timber sale administration activities and specifies that only a limited (generally 20%) portion of the roads and units will be checked. Total costs attributed to monitoring are only 9,500 per year. The principal mitigation measures listed are road and unit layout and design and application of BMPs to reduce impacts. Although substantial fisheries and watershed rehabilitation needs are described in the "enhancement opportunities" section, they are conspicuously missing from the mitigation section. We recommend that specific rehabilitation projects be described in the mitigation section of the FEIS and implemented in the ROD.

We further recommend that the monitoring section define the road, fish, wildlife and watershed monitoring which will occur in the previously roaded and logged parts of the project area, and what if any mitigation will follow the identification of problems such as blocked fish streams, washed out roads or culverts, slides, etc..

Log Transfer Facilities (LTFs)
The DEIS indicates that a number of the proposed LTFs are currently not permitted and includes some suggested changes to them. We would ask that the DGC closeout letter clearly state that the LTFs,

campus, or other parts of the project which may require additional agency reviews will be reviewed for coastal consistency separate from the current and final NEPA reviews for this sale.

The LTF dive reports are displayed in appendix E. The reports commonly include statements such as "no significant or sensitive habitat was noted" although nowhere does the document discuss what constitutes "significant" or "sensitive". It is interesting that the dive report for Schulze Cove documents the habitat conditions due to past log storage deposition of bark and debris, but the extent of the problem is not described. The rafting area was in excess of 200 acres. A recent dive by the USF&WS documented smothered and dead benthos for at least 40 acres, but was not complete. The analysis for this LTF in the FEIS should include a complete survey of the area impacted by bark and debris to include aerial extent and depth.

Similarly the discussion of the LTF site at Rodman Bay documents that the amount of "old garbage, cable, engine blocks, tires, etc. was too numerous to note on individual transects..." and later indicates more of the same was found at St. John the Baptist Bay. Rather than address this as an unpermitted solid waste problem, the report talks about "it is nice to see that life there is taking advantage of what we left behind years ago...". As discussed in our scoping comments we recommend the FS define the scope and extent of this problem in the FEIS and whether or how it will be mitigated.

Previous NEPA documents displayed dive transect information including drawings showing distances and describing habitats and species observed. The narratives in appendix E are by contrast unscientific, significantly less informative, and more opinionated. We recommend that this be remedied in the FEIS. Similarly the table in this appendix and the narrative on p2-14 only reference the TTF siting guidelines. We recommend that the LTF discussions include analysis of the Construction and Operation guidelines as well.

The FEIS should include an analysis of the loss of logs and bark from rafting activities. The only document I have seen was a consultant's report that estimated about 100 mmmb of timber lost from rafting operations and washed up on the beaches of the Tongass. Schulze Cove is a rafting area which has not been associated with an individual LTF, yet which has sustained significant harm from rafting. The Marine environment analyses need to include these larger issues, and be revised to better reflect the reality of rafting and storage impacts. It is interesting to note that the ecological benefits of a barge facility (when ever one is proposed by the FS) are always described favorably in NEPA documents. The benefits are real and we appreciate the use of a barge landing in a place like St. John the Baptist Bay which has resources and uses of concern. The ecological costs of rafting are equally real and should be realistically described.

Helicopter Log Transfer

Bark loss from logs transferred from land to water by helicopter has not been researched by the state or federal agencies in Alaska, however this method appears to offer an extremely high potential to generate bark and debris. Individual logs (many with some limbs attached) are put into the water by helicopter in an operation where the emphasis is on rapid turn around. In many cases the forward movement of the helicopter has not stopped, and the logs are dropped rather than placed in the water. The logs are then flat rafted to a processor barge, or to a shore based facility. It is easy to lose unbundled single logs from rafts, and the jostling and contact between logs is greater than if they were bundled. Logs are rafted to

the processing barge area, then pushed over to the barge, and transferred out of the water. Next they are limbed, processed and bundled, and placed back into the water in another raft. If hauled to shore, the logs are pushed over to the LTF, removed from the water, processed and placed back into the water. There are three log transfers instead of one with substantial additional jostling and, we assume, associated bark loss from this transfer method. The LTF and ACOMP guidelines attempt to minimize bark loss and other habitat impacts from log transfer. For the shore facility the logs are rafted in water shallower than the TTF guideline for both their transfer to shore and back into the water. As noted in our scoping comments, we understand that there are tradeoffs between roads, LTFs, and helicopter log transfer to water. However this method does have drawbacks that can be mitigated by advance planning, and careful site selection and design. If this method is applied for by the FS, then the FS should carefully select the location and timing of the proposed action to minimize impacts to existing resources and uses. Consideration should be given to the project's relation to fish streams, juvenile and adult fish migration/rearing areas, commercial fishing areas and timing, crab habitat and fishing areas, etc.. For example Goose Cove is a highly productive salchuck and Deadman's reach is used by crabs for pot fishing.

Information Loss

The DEIS p2-8 and elsewhere documents the site specific information gathered by the FS on the proposed unit pool and transportation network. "As a result of this process we eliminated many environmentally sensitive areas from consideration." A significant long term problem is that the FS has no effective system in place to identify, file and retrieve this site specific information for future use and analysis. The long term cost is huge in terms of duplicated work, and the loss of expensive, accurate, site specific information on problems such as blind leads, hazardous soils, volume class errors, etc. which are important for future land management. Overall this is a huge and costly problem.

Site-specific concerns

The DEIS on page 4-20, table 4-13 indicates that all alternatives propose timber harvest and/or roads in beach and estuary fringe. We could not find any other information in the document about which units or roads these were. We strongly oppose any logging or roading in beach fringe areas. In order to make an ACOMP consistency determination we would need more information on these proposed units and roads and whether all practicable alternatives to keeping them out of beach and estuary fringe had been examined.

Road 75831S is unacceptable as depicted on its road card. It appears to take out a long section of class 1 & 2 stream buffer as well as a considerable amount of beach fringe while negotiating unstable slopes. We are frankly surprised there are no wildlife or fisheries concerns noted on this road card. This road needs to be dropped from Alt. 2 especially because road 75831 is a feasible alternative, appearing as such in alt. 3.

Lisa Creek -- The high concentration of harvest in the second drainage of the Lisa Creek watershed would eliminate most of the productive forest in that drainage in one entry. That repeats a pattern of heavy initial entry practiced in most watersheds of the project area. We believe the intensity of harvest proposed is excessive. We are particularly concerned about units 9061, 9062 and the block of units 9011, 9012, 9021, and 9022. These are in important deer travel corridors and comprise valuable deer winter range.

St. John Baptist Bay -- Again, we believe the intensity of harvest proposed for this area in Alt. 2 is too great. This was identified as an important subsistence hunting area and the amount of logging proposed will greatly fragment all of the productive forest on the peninsula. If harvest occurs here it needs to be on a lesser scale than in alt. 2.

Rodman area -- The preferred alternative proposes units that would result in large blocks of clearcut abutting each other and second growth in configurations that do not allow for wildlife travel corridors between high and low elevation habitat. Our concerns include the following units: 1144-1147, 3011-12, 3142-43. Some of the units on the "Rod/Apple" peninsula may be encroaching on beach fringe. Unit boundaries need to be laid out to assure that some old-growth corridor remains linking the remaining habitat on that peninsula with other old-growth habitat.

SUBSISTENCE

Available subsistence research, wildlife modeling and harvest reporting, and Forest Service ANILCA Section 810 procedures and requirements, when taken together, allow a thorough examination of the impacts to subsistence uses of this timber sale. The following address how the Forest Service has used best available data and whether or not the Forest Service has followed accepted procedures in making Section 810 determinations in this document.

We commend the Forest Service for offering a range of timber volumes, between 30 and 100 mmmbf of timber, in this DEIS. Too often we have found that timber sale alternatives result in a narrow range of timber volumes. We believe that the approach followed in NWB does a better job of meeting NEPA requirements and allows Forest Service greater opportunity to limit or mitigate impacts on subsistence uses.

From our perspective one of the most critical elements of the Northwest Baranof sale is it's potential impacts on subsistence, particularly deer harvest. The preferred alternative proposes harvesting a large volume of timber in close proximity to the region's largest subsistence community, in an area where every major drainage has been clearcut logged in the past using logging methods which are no longer acceptable. We fear that this sale may be the most deleterious of any sales that have taken place in the Chatham Area to date in terms of its impacts on subsistence. It would be difficult to find another area in the Tongass National Forest which is more important to subsistence resources and lifestyles than the area encompassing the Northwest Baranof Project Area. The following comments speak to these related aspects of the proposed sale.

Alternatives Considered in Detail

The NWB DEIS's five alternatives included Alternative 1, the Proposed Alternative and Alternative 2, the Preferred Alternative. The DEIS Summary failed to clearly designate a preferred alternative. The bulk of the public (who reviewed only a copy of the DEIS Summary) were led to believe that the proposed action was the preferred alternative. DGC also believed this and initially requested that state agencies review the proposed action.

Chapter 2, Volume 1, of the DEIS identifies the Forest Service Preferred Alternative on the last page (2-25), of the chapter. We recommend that the Forest Service make designation of a preferred alternative

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much clearer in future documents. The confusion resulting from this discrepancy made it unclear as to whether the Forest Service was recommending logging of 35.5 mmBf (Alt. 1) or 51.9 mmBf (Alt. 2), a difference of 16.4 mmBf of timber.

Selection of Northwest Baranof as a Project

The selection and scheduling of this project does not appear to have been influenced by subsistence considerations. Game Management Unit 4 in general and the Sitka Sound/Peril Strait in particular have been identified as management concern areas for deer. During regulatory years 1991 and 1992 in the Sitka Sound/Peril Strait area:

- 1) seasons were curtailed by one month on both Federal and State lands;
- 2) bag limits were reduced from 6 to 4 deer on both Federal and State lands;
- 3) Federal non-subsistence hunters were prohibited from hunting on federal lands in this area.

Demand for deer in Wildlife Analysis Areas (WAAAs) 3001, 3002, 3312, and 3314 already exceeds the long term habitat capability to produce deer by a serious margin (chapter 4, page 51). The entire project area historically has been a very important hunting area for Sitka residents and today contributes about 35-40% of the Sitka deer harvest. WAAAs 3001 and 3002 have been by far the most productive hunting areas over the past 6 years, contributing some 28% of the Sitka total harvest.

If minimizing significant effects on subsistence users was an important planning goal, Northwest Baranof would not be scheduled for logging as long as other areas in the Chatham Area or forest wide are available for logging where subsistence impacts might be less. In particular, further logging in WAAAs 3001, 3002, 3003, and 3104 would be avoided in order to protect Sitka's residents most important deer harvest areas.

The document indicates in several places that all areas of the Tongass have subsistence use conflicts, but fails to take into account the relative values of different areas to different communities. We believe that there are many areas of the Tongass where subsistence effects of logging would be lower than in the NWB area. Gross parameters such as size of subsistence community, proximity to subsistence use areas, and known subsistence use information such as the TRUCS studies clearly indicate differential levels of use and associated subsistence values for different areas.

We recommend that the project area selection process be changed to take this issue into account. We believe the discussion on project area selection on p1-9 and elsewhere is inadequate and incomplete.

Evaluations of Individual Harvest Units impacts on Subsistence

With the active encouragement and participation of the NWB planning team, the Division of Subsistence developed a method of rating the subsistence use of each of the more than 450 cutting units in the NWB pool. The goal of this rating system was to provide a planning tool that would provide 1) an index of likely impacts to subsistence uses for each cutting unit and 2) an improved method of evaluating the potential impacts of different logging alternatives. The idea behind the rating system was to provide a better means of evaluating different logging alternatives. Accordingly, we developed a draft rating scheme and applied it to the more than 450 units in the Northwest Baranof pool.

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The principal basis for the subsistence ranking we developed with our Forest Service colleagues is an assessment of the importance of each unit or group of units as a subsistence harvest area, primarily for deer. The other two large mammals (goats and brown bear) potentially affected by the project have lower subsistence values than deer, although highly prized by other users. Bear are considered to be a subsistence use species in GNMU 4, which comprises Admiralty, Baranof and Chichagof Islands.

A first draft of the rating system was completed by Drs. Bob Schroeder and Thomas Thornton in February 1994; this draft was based on review of available quantitative and qualitative data. Draft maps based on this rating system were produced by Cindy Hartman of the NWS team and reviewed by members of the Sitka Fish and Game Advisory Committee, Sitka Tribe, and members of the public in March 1994. There was widespread public support for the rating approach and for the ratings depicted in the first draft maps.

Ratings were further refined by Ms. Hartman through consultation with Dave Hardy, ADFG, and Dale Kanen, USFS. Ms. Hartman later worked with Dr. Schroeder in December 1994 on the rating scheme. They produced maps showing slightly different rating schemes: one with ratings based more closely reflecting the ADFG work and public meeting input, the second a modification of this scheme with input from Mr. Kanen.

Application of the cutting unit rating system suggests that the proposed action will have very significant impacts on subsistence. Specifically:

- Most of the units with the lower rating of 2 or 3 are in the north end of the project area and well away from the coastline.
- According to our ratings, 59% of the volume proposed for logging in the preferred alternative (Alt. 2) present high (4) or very high (5) conflicts with subsistence use.
- Of the action alternatives, Alternative 3 impacts subsistence users the least, 49% of the volume proposed for logging present medium (3) or high (4) conflicts with subsistence users.

While no alternative will include all the proposed units, we feel that the high impacts on subsistence suggested by our analysis are indicative of a fundamental problem with this sale: The Northwest Baranof harvest target requires too much timber in a project area that is crucial to subsistence and is already strained by habitat alteration from past logging activities and present subsistence hunting pressure. Short of postponing this sale in favor of others which are not in areas so vital for subsistence, the only way to significantly reduce impacts on subsistence will be to remove cutting units from the project that show medium to very high levels of likely impact to subsistence use; these would be cutting units rated 3, 4, or 5 (See attached table).

None of the unit cards in the DEIS, (Appendix G) include subsistence ratings, and logging unit subsistence rating maps were not included in the document. We could only find one brief reference to the rating system in the document (Chapter 4, p.59). This lack of maps and limited reference to the subsistence rating system leads us to the conclusion that the Forest Service may have failed to use the best available data in their analysis. We recommend that the maps and subsequent analyses be included in the FEIS, and used to develop the final unit selection in the ROD.

Memo to Christine Valentine
Re: Northwest Baranof DEIS
File: AK 9508-1011

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Roads

All of the alternatives call for significant road building. We are concerned about the effects of roads on subsistence access and competition. Roads will likely be used by hunters with ORV's (Off Road Vehicles), mountain bikes, or hunters who are logging in the area. Roads closed following logging will still be accessible by ORVs, mountain bikes and on foot. The DEIS fails to accurately or adequately address how roads will affect long term subsistence use patterns.

The document p4-54 addresses hunter access and subsistence use effects. We appreciate that "RMOs developed for the project area roads will take subsistence uses into consideration." We recommend that project area roads be put to bed, and drainage structures removed in compliance with the FPA and FS and ACWP standards.

Roads and competition from logging camps

The DEIS page 4-55 indicates that competition for wildlife resources will temporarily increase due to increased access and the presence of the timber work force. For some time we have suggested that the Forest Service develop a site-specific model estimating the demand on wildlife by logging camp personnel. As with the regional model, the site-specific model should be tied to population (i.e., estimated population of the work force domiciled in the project area). It should not be assumed, however, that the percentage of remote logging community residents who hunt and fish is comparable to that of the general population; in fact, evidence suggests that it is higher. Our past research in GMU 4 suggests that the average bag in logging camps is 1 to 1.5 deer per person per year (based on the entire population of the camp, not just those employed in timber harvest or of age to hunt) (ADFG Harvest Data).

We understand that logging camps are considered by the Forest Service to be subsistence communities in part because of their rural status. Realistically however, logging camps provide a new focus of fish and wildlife harvest which is superimposed on the long-term existing use patterns of rural communities which have customary and traditional ties to specific subsistence use areas. Logging camp residents are the ones most likely to have motorized vehicles available during logging operations and most able to take immediate advantage of the road system. The DEIS fails to undertake a complete analysis of impacts on subsistence from logging camps.

Marine Environment

Marine fish, shellfish, and marine mammals are important subsistence resources. Bark accumulation occurs as a result of activities associated with LTFs, affecting marine fish and shellfish productivity. The activities associated with the construction and operation of LTFs and log storage areas disturb marine mammal populations and discourage hunters from frequenting the area. We are concerned with the proposed LTFs in Nakwasina Passage and Sound which may adversely affect crabbing in the area. We are particularly concerned with the location of the proposed LTF at Noxon Creek and its potential effects on marine mammals using the nearby haul-out. We appreciate the fact that the FS has not included harvest in the Noxon Creek or Nakwasina river basins in the preferred alternative, which avoids the areas of concern listed above.

Memo to Christine Valentine
Re: Northwest Baranof DEIS
File: AK 9508-1011

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Cumulative effects on subsistence deer

Although the project area is limited, Sitka's and other communities' subsistence patterns are also being affected by other recent timber sales nearby in the Tongass: Kelp Bay, Ushk Bay, False Island Salvage Sale, and West Baranof/Kruzof. To assume that further timber harvesting will have little or no effect on subsistence because deer are presently being harvested at levels greater than the assumed harvestable percent of current modeled habitat capability does not adequately address the Forest Service's responsibility to maintain subsistence resources and uses.

Section 810 Determinations

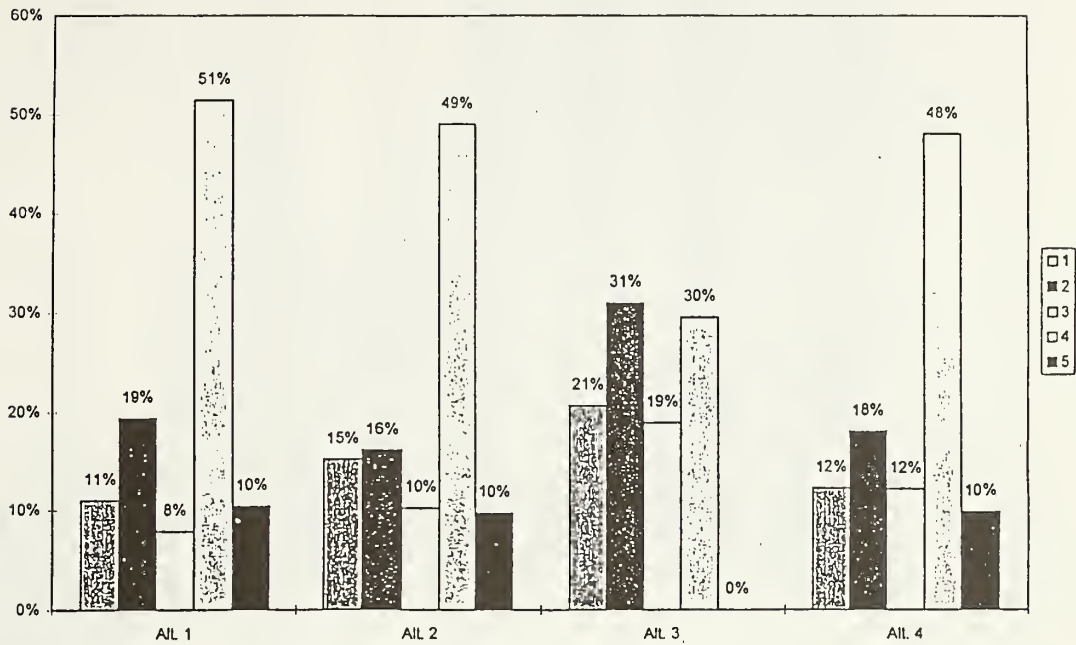
The ANILCA placed an emphasis on maintaining subsistence resources and lifestyles. All of the Northwest Baranof project's alternatives, including the no action alternative, result in a significant possibility of a significant restriction on subsistence use of Sitka black-tailed deer. In July 1990, the Federal Government took over management of subsistence use of wildlife resources on federal lands, making the Forest Service responsible for maintaining subsistence resources and lifestyles on the Tongass National Forest. None of the Northwest Baranof alternatives adequately maintain subsistence resources and lifestyles. The FS has failed to demonstrate that the project is necessary and consistent with sound management principles for the utilization of public lands, or meeting the FS responsibilities to maintain subsistence values and uses.

Efforts taken to protect what the Forest Service considers highest value subsistence areas, ie lands adjacent to existing road systems, beach fringe habitat, and areas in close proximity to communities, is insufficient for the protection of subsistence resources. Obviously fish and wildlife habitat important for producing high value subsistence species extends beyond these artificial lines on the map. We believe that the NWTB project involves more than the minimum amount of public land necessary to accomplish the purpose of the proposed activity.

We disagree with the Forest Service that reasonable steps have been taken to minimize adverse impacts upon subsistence uses and resources. The Forest Service has failed to adequately address concerns over the impacts of further logging to an area already stressed for deer. The Forest Service has also apparently failed to use best available data in its analysis of the Northwest Baranof Project. Finally, we disagree strongly with the logic that further timber harvesting will have little or no effect on subsistence because deer are presently being harvested at levels greater than the assumed harvestable percent of current modeled habitat capability.

We recommend that alternative 3 with minor modifications as described later be adopted in the ROD. It has the lowest adverse effect on subsistence of any of the action alternatives (DEIS p4-88) and follows the successful pattern established in the Kelp Bay decision document to concentrate timber harvest in areas furthest from subsistence communities, where impacts on subsistence uses would be minimized.

% Vol. from Each FG Subsistence Sensitivity Rating by Alternative



JOINED6.XLS

Page 1

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19
October 16, 1995

Memo to Christine Valentine
Re: Northwest Baranof DEIS
File: AK 9508-10JJ

Thank you for the opportunity to comment. As discussed last week we will provide a copy of this document directly to the Forest Service as well as copies to the appropriate agencies.

cc: Lana Shea -ADF&G H&R, Douglas
Bob Palmer -ADNR Juneau
Jim Ferguson -ADEC Juneau
Marlene Campbell -City and Borough Sitka
Duane Peterson -USF&WS Juneau
Valerie Payne -EPA Anchorage
Bob Schroeder -ADF&G Subsistence, Douglas
Tom Paul -ADF&G Douglas
Sitka ADF&G Staff

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME SITKA FISH AND GAME ADVISORY COMMITTEE

USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Siginaka Way
Sitka, AK 99835

Dear Jim,

On October 11, 1995, the Sitka Fish and Game Advisory Committee met with four members of the Forest Service N.W. Baranof Planning Team for a presentation on the N.W. Baranof Draft Environmental Impact Statement, and the proposed N.W. Baranof Timber Sale Alternatives. Their presentation was informative and well presented. We appreciated their thoroughness. The planning team was very helpful in answering many questions from both our Fish and Game Advisory Committee, and members of the audience.

After considerable discussion and deliberation, the Advisory Committee voted unanimously to support Alternative #5, which clearly states, "...No more logging in the proposed areas of N.W. Baranof..." The following comments are from each member of Advisory Committee present at this meeting:

Molly Ahlgren (Conservation Seat): Supports Alternative #5. Had concerns about flawed EIS and would like to see timber cutting put on hold.

John Vallie (Hunter Seat): Feels NW Baranof timber is too overcut already. Supports Alternative #5. Recognizes that if timber has to be cut, he might support Alternative #3 if Eric Jordan's recommendations were followed. (See attached sheet.)

Sue Sturm (Trapper Seat): Supports Alternative #5. Very concerned about the impact on trapping in these areas. Agreed with John Vallie and Eric Jordan.

Serving the Alaska Board of Fisheries and Alaska Board of Game
Board Support Section, P.O. Box 25526, Juneau, Alaska 99802-5526

TONY KNOWLES, GOVERNOR

October 15, 1995

Mark Jacobs (Subsistence Seat): Opposed to any further impact on N.W. Baranof, and the Hoonah Sound areas. As a native leader, these issues are a source of considerable heartache. Supports Alternative #5. All logging impacts subsistence, all recreational areas, and scenic values.

Bill Paden (At Large Seat): Represents all user groups - Hasn't heard any support from members of the community, for logging close to Sitka. Everyone feels logging N.W. Baranof would have a negative impact on their lifestyle. Supports Alternative #5.

Larry Beebe (Guide Seat): As the guide representative, felt he would support Alternative #5. However, felt that multiple uses are viable. If cutting is inevitable, then Alternative #3 as amended by Eric Jordan could be acceptable.

Theresa Weiser (Charter Seat): Has strong feelings about any further logging on N.W. Baranof because of the effect on the natural resources and the esthetics. Too close to Sitka. Supports Alternative #5.

Karen Johnson (Alternate Seat): Fills in for any seat that is absent - Feels that all of S.E. is her backyard. Doesn't want the impact of logging in N.W. Baranof. Supports Alternative #5.

Logging on N.W. Baranof is a very sensitive issue to all Sitkans. We appreciated the manner in which this issue was presented by the Forest Service N.W. Baranof Planning Team representatives. Our committee recognizes the extent of the effort that it has taken to produce this information. Thank you for giving us the opportunity to present our community's views on this issue. We look forward to an ongoing productive dialogue regarding logging in the N.W. Baranof area.

Respectfully,

The Sitka Fish and Game Advisory Committee

cc: Gary Morrison

Serving the Alaska Board of Fisheries and Alaska Board of Game
Board Support Section, P.O. Box 25526, Juneau, Alaska 99802-5526

TONY KNOWLES, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF PARKS AND OUTDOOR RECREATION

3401 C STREET, SUITE 1000
ANCHORAGE, ALASKA 99503
PHONE (907) 782-2800

October 31, 1995

Mr. James Thomas, Team Leader
USDA Forest Service - Sitka District
204 Signaka Way
Sitka, AK 99835

RE: Northwest Baranof Timber Sale DEIS Comments

Dear Mr. Thomas:

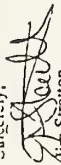
The State of Alaska Division of Parks and Outdoor Recreation has reviewed the subject DEIS and has determined that alternative 2 is our preferred alternative.

Big Bear/Baby Bear Bay State Marine Park is located within the proposed project boundary. Alternative 2 is the only alternative that adequately protects the scenic and recreational values for which the park was established. All other alternatives propose harvest within VCU 288, an action we feel will visually and acoustically affect the Park's purpose. Additionally, the proposed road into VCU 288 would provide overland access to the area, further degrading the quality of the marine recreation experience for which this State Marine Park was established.

Please consider the comments submitted by the Sitka Area State Parks Advisory Board. If you select an alternative other than 2, please remove VCU 288 from your proposed sale.

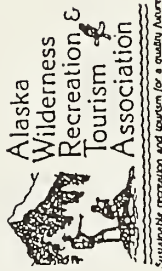
Thank you for the opportunity to comment on this project.

Sincerely,


Jim Stratton
Director

/skc

cc: DGC Christine Valentine
Sitka Area State Parks Advisory Board
Bill Garry, SE Superintendent, Alaska State Parks



P.O. Box 1353
Valdez, AK 99686
Phone: 907-835-4300
Fax: 907-835-5679

USFS, Sitka Ranger District
Sitka Alaska

October 10, 1995

Re: NW Baranof Timber Sale Draft EIS

To Whom It May Concern :

AVRTA would like to comment on the proposed timber sales on NW Baranof. As stated numerous times before, we continue to be concerned that adequate consideration of the economic impact to other industries are not being fully demonstrated. Tourism and recreation are very vital to our local outdoor enthusiasts, the local economy, and to visitors in our area. Ecotourism and related activities require large, undeveloped areas for relatively secluded, private experiences. Unlike other tourism activities, ecotourism relies almost entirely on authentic, wildland, wildlife and cultural activities. This means that our members make their money from resources that are natural and undeveloped, not contrived or developed. Ecotourism is a very fast growing segment of forest users.

The world's last great places will continue to see extremely rapid growth in the ecotourism markets well into the next century. How has this EIS valued that economic future of the next 50-100 years or more? We suggest that it has not been addressed.

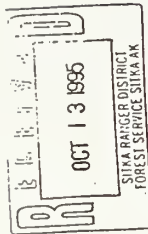
None of the alternatives are designed to be compatible with tourism and recreation. We need alternatives of selective cuts so small operators harvesting timber can co-exist with tourism and recreation industries. Our position is there must be wider selection of alternatives designed to assure all forest users and forest dependent industries can co-exist on a sustainable basis indefinitely into the future.

until the USFS begins to fully recognize and appropriately value the impact of large-scale clearcutting on all the other users of the forest, we cannot support timber sales of this nature. Our organization, as well as numerous others, continues to make this comment. We do not feel that the Tongass is being adequately managed for multiple uses. In fact, the dominant user (timber harvesters) continues to heavily impact the other users and entire future industries without due consideration.

Sincerely,

Karen Martinsen
AWRTA Board of Directors

K-24



Northwest Baranof Draft Environmental Impact Statement

Comment Form

The USDA Forest Service is obtaining public comments on the Northwest Baranof Draft Environmental Impact Statement. You may use as many of these forms as necessary to provide written comments on the draft EIS. Please deliver or mail it to the Forest Service. The Comment Period has been extended. Comments will now be accepted until 5 PM on October 16, 1995.

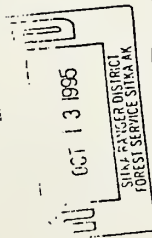
32 I am in support of Alternative 5 (no new) because it is opposed to clear-cut
110 logging and feel that it is extremely damaging ecologically on a very broad scale.
150 It stresses wildlife habitat and decreases an already stressed deer population. Not
to mention erosion and further damage to remaining forest. I feel also that
economically speaking that this type of logging practice is not a cost effective
or sustainable style of timber industry with huge long-term damaging effects.
I enjoy recreational use of this island i.e. (hiking, hunting, skiing etc.) and would
like to do these things and see the island in a pure state not an over island
that its communities are letting it crumble away and destroy what remains as
as it was before we still try and keep it for the ones who follow after us.

— BRATZLEY ARNOLD

Box 2034

SITKA, AK 99835

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Signaka Way
Sitka, Alaska 99835



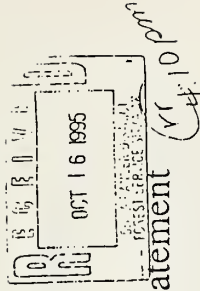
Northwest Baranof Draft Environmental Impact Statement

Comment Form

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30-1 support alternative #5 - no action
The forest is far more valuable to Sitka -
and humanity - as is -
Linda Behrken
403 Lincoln St 237
Sitka AK 99835
Linda Behrken

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Signaka Way
Sitka, Alaska 99835



Northwest Baranof Draft Environmental Impact Statement

Comment Form

The USDA Forest Service is obtaining public comments on the Northwest Baranof Draft Environmental Impact Statement. You may use as many of these forms as necessary to provide written comments on the draft EIS. Please deliver or mail it to the Forest Service. Comments will be accepted until 5 PM on October 2, 1995.

As a new resident to Sitka (and a former resident of Juneau from 1989 to 1992) I am dismayed at the continued planing being proposed by the US Forest Service for clear cutting in the Tongass. With respect to the Northwest Baranof Draft EIS I believe that it is an incomplete presentation of the alternative but best. At its worst it presents a pseudoscientific interpretation of the ability of the Tongass to provide timber at harvest levels while ignoring the effect of these "harvests" on the Forest's ability to provide a foundation for the alternative hunting and fishing which are such a part of the quality of Sitka.

Wildlife biologists have already stated that existing clearcuts will have a detrimental effect on chinook fish populations. The EIS does not support these conclusions. Furthermore, forest ecologists such as former Forest Service scientist Paul Alaback have stated that clearcutting is a largely deleterious practice for the long-term health of a forest. The EIS does not address this either. In fact, at a recent town meeting the overall quality of the Statement was seriously criticized by many long-term residents of Sitka.

I believe that the Draft EIS is a poorly crafted attempt to justify cutting methods and policies that the Forest Service wants to implement anyway.

110 Stop the clearcutting and DO NOT implement Alternative P1

- Robert Bruce Bennett

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Signaka Way
Sitka, Alaska 99835

October 14, 1995

James Thomas - TEAM LEADER
U.S.D.A. Forest Service
Wetzel Ranger District
204 Sigana Way
Sitka, AK 99835

Mr. Thomas, to comment on the Draft
to would like to comment on the Timber Sale.
EYS on N.W. Baranof Island. Timber Sale.
to oppose all clearcutting options.
to support Alternative fire. No Action.

K-26

Sincerely -
Yvonne Beckland
Box 2566
Sitka, AK 99835

THE BOAT COMPANY, LTD.

Suite 300, 215 Fifth Street
West Palm Beach, Florida 33401
(407) 832-8845
Fax (407) 832-3226

September 26, 1995

USDA Forest Service
Mr. Gary A. Morrison
204 Sigana Way
Sitka AK 99835

Dear Mr. Morrison,

Regarding the Northwest Baranof timber sale(s), we feel the Forest Service should go back to "square one."

With the exception of an occasional trip into Misty Fjords, most of our tour business takes place in the northern part of the Tongass (because of past timbering, the south end is less attractive).

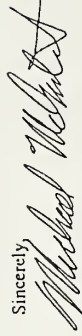
Now we find the north end is being called upon to provide logs for the Ketchikan mill. This makes no sense at all.

Tourism already provides more economic benefits and jobs than the timber industry, and I understand fishing provides more than either one of them. It would appear to us that if the KPC mill must have approximately 200 Mmbf a year, and another 50 Mmbf must be made available for small mills, and all of the foregoing is to be processed in the South, then the South should provide the timber.

We had thought the closing of the Sitka mill would result in less logging activity in the North, thus providing tour operators such as ourselves the opportunity to increase our business and economic benefits to the communities we serve. I should add that operators such as ourselves have little or no impact on the land or the fishery resources.

Obviously, the North end will be called upon to provide a certain amount of timber for the small operators. But if those operators restricted themselves to processing a value-added product, not only could the requirements be cut to 20 to 30 Mmbf a year, but the number of jobs over the long term could be stabilized.

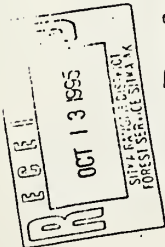
Sincerely,



Michael McIntosh

MM/ss

"Nowhere else on earth is there such an abundance and significance of mountains, fjords, and glaciers as here...the Alaska coast is becoming the hangout of the earth, and pilgrims, not only from the United States, but from far beyond the seas, will throng in endless procession to see it. Its grandeur is more reliable than the gold in the fields; the timber has it; it never has a drought."



Northwest Baranof Draft Environmental Impact Statement

Comment Form

The USDA Forest Service is obtaining public comments on the Northwest Baranof Draft Environmental Impact Statement. You may use as many of these forms as necessary to provide written comments on the draft EIS. Please deliver or mail it to the Forest Service. The Comment Period has been extended. Comments will now be accepted until 5 PM on October 16, 1995.

I believe that further logging on Northwest Baranof would adversely affect subsistence and recreation opportunities and it is from this belief that I overwhelmingly support Alternative Five (5) or No Action. Please consider finding other areas to harvest.

Thanks

Michael Roussin

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Sighnaka Way
Sitka, Alaska 99835

Laura Bower
POB 6407
Sitka AK 99835
10/15/95

Gary Morrison
Forest Supervisor
USDA Forest Service
Sitka Ranger District
204 Sighnaka Way
Sitka AK 99835

Dear Mr. Morrison:

I have reviewed the Draft EIS for the NW Baranof Timber Sale and would like to offer a few comments.

Like many Sitkans my family uses the NW Baranof area for subsistence. Since we are a commercial fishing family our income declines in the winter months. This makes the subsistence portion of our income extremely important to us. I'm concerned about the

projected declines in deer populations
as a direct result of old growth
logging-

Your proposed cuts in the preferred
Alternative 2 are just too close
to town. As evidenced by our
recent Prop. 2's very close vote,
many of us in Sitka would
like to see the end of old
growth clearcutting in our back
yard. Not only do the ~~proposed~~
proposed cuts in Nekawasina and
St. John Baptist Bay threaten
our crucial Subsistence lifestyle -
they're also right on the
ferry route, and Sitka needs
to protect visual values too.

Fish Bay is heavily used for
recreation and subsistence and
I personally would hate to
see logging activity there.
If you must offer trees for
sale in the NW Baranof
area, I would like to see the
focus on Rodman Bay, but
better yet I'd like to ask for
a choice of Alternative 5,
the No Action alternative.
I believe the trees are worth
more. Standing.

Sincerely,
Lana/Bowen
Sitka

James Thomas, Team Leader
USDA Forest Service-Sitka Ranger District
204 Signaka Way
Sitka, Alaska 99835

12 October, 1995

Mr. Jim Thomas, Team Leader
Sitka Ranger District, USDA Forest Service
204 Signaka Way
Sitka, Alaska 99835

Re: NW Baranof Timber Sale

Dear Team Leader:

The following are my comments on the Northwest Baranof Timber Sale.

My preferred alternative is #4. It provides the most timber and jobs which will consequently have the greatest benefit for the people who actually live in Southeast Alaska.

Your chart on page 26 chapter 3 of volume 1 has a gross error. On page 24 of the same chapter on Sitka blacktail deer it says, "They also feed in recent clearcuts where forage is plentiful." The chart shows a gross error in not designating that deer use second growth. Deer actively feed in clearcuts up to 20 years and to 40 years if precommercial thinned.

The same chart mentioned in the previous paragraph fails to also acknowledge Brown Bear use in clearcuts. These bears eat skunk cabbage roots in the spring and berries all through the fall in clearcut units. This is just common sense to anyone who spends time in the forest. Your wildlife people need to occasionally leave their desks

Thank-you
Mike Brown
POB 9195
Ketchikan, Alaska 99901

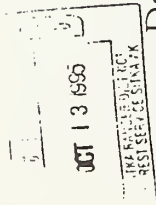
Dear Mr. Thomas:

This is a comment on the DEIS on the NW Baranof Timber Sale. I prefer the NO CUT alternative, i.e. Alternative No. 5.

This area should not be cut. My family relies entirely on deer for our red meat. It is the only healthy alternative for red meat. We are subsistence deer hunters and are very concerned about the reduction of winter habitat for deer that this cut would cause.

Sincerely,

Natasha I. Calvin
Natasha I. Calvin
Box 2966
Sitka, Alaska 99835



Northwest Baranof Draft Environmental Impact Statement

Comment Form

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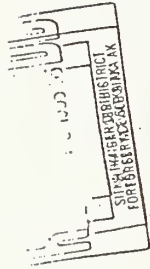
30 I support Alternative 5, the No-Action alternative

10 Because I oppose clear cutting in the local Sitka area

Not only do I use this area for recreational activities which would be ruined by clear cutting, such as hiking, fishing and hunting, but clear cutting in this area is in direct conflict with one of Sitka's other main industries: Tourism. It makes no sense to pursue to industries which are in direct conflict with each other.

Jason Caputo
PO Box 922
Sitka, Alaska 99835

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Signakak Way
Sitka, Alaska 99835



Northwest Baranof Draft Environmental Impact Statement

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30 I support Alternative 5 because

10 clear cut logging is extremely damaging

Wm Charles
PO Box 2882
Sitka AK 99835
907 747-6016

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Signakak Way
Sitka, Alaska 99835

United States Senate
COMMITTEE ON APPROPRIATIONS
WASHINGTON, DC 20510-6025

December 7, 1995

FILE CONTROL NO: 95-087-11-EPB
MAILED BY: 12-28-95
SIGNED BY: _____
DATE: _____
TO: (RECONT.)

Phil Janik
Regional Forester
U.S. Forest Service
Federal Office Building
Box 21628
Juneau, Alaska 99802

Dear Phil:

Enclosed is a copy of a letter from one of my constituents, Dan Keck, regarding his testimony for the Northwest Baranof Timber Sale. I would appreciate it if you could include this testimony in the record. Thank you for your time and attention to this matter.

With best wishes.

Cordially,

TED STEVENS

Respectfully,

Dan Keck
Dan Keck
President

The Greater Sitka Chamber of Commerce has 170 members and these members have approximately 2200 employees. We have been a part of Sitka since 1901.

Please submit this as our official testimony into the record.

Respectfully,

Dan Keck
Dan Keck
President

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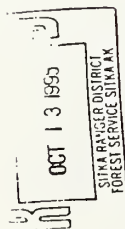
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FOREST SERVICE
UNIVERSITY ALASKA

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Northwest Baranof Draft Environmental Impact Statement

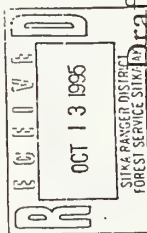
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While I strongly support alternative S-1 absolutely must
units 3, 4, & 5 be removed for bear consideration.
Project impacts (negative) on wildlife habitat make
removal of these units mandatory.
Let's go back to the drawing board while we still have time.

Harry Chandra HARRY CHANDRA

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Signaka Way
Sitka, Alaska 99835



Northwest Baranof Draft Environmental Impact Statement

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I support Alternative 5

Vern Culp

403 Lincoln St 237

SITKA AK 99835

Vern Culp

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Signaka Way
Sitka, Alaska 99835

Northwest Baranof Draft Environmental Impact Statement

Comment Form

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1 support alternative 5 because
I oppose clear-cutting and
large scale timber operations, I am
a subsistence fisher/hunter & the
reason I live here is the forest.
Please protect the remainder of
our old growth forest so our children
may experience what makes this place
magic. Amanda Cunningham 14 Oct 95
P.O. Box 5182
Sitka, AK 99835

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Siginaka Way
Sitka, Alaska 99835

OCT-12-1995 15:49

P.02

P.O. Box 1305
Sitka, AK, 99835
9. October, 1995

James M. Thomas, Team Leader
USDA Forest Service
Tongass National Forest, Chatham Area
Sitka Ranger District
204 Siginaka Way
Sitka, AK. 99835

After reviewing the Draft Environmental Impact Statement of
the proposed Northwest Baranof Timber Sale/s, I would like
to submit the following concerns as public comment:

1. Past management failures in extensive riparian areas of Redman
Creek, Adams Creek, Duffield Valley, Fish Creek, East Klatusina
and Nexon Creek, where inappropriate logging methods have
created topsoil depletion, erosion into fish streams, large areas
of depauperate plant species diversity, loss of winter wildlife
habitat, and loss of timber productivity due to soil "puddling."
are never acknowledged or addressed in discussion of
existing conditions, except in a brief section discussing
effects on fish. Obviously, the continuing impacts are
not limited to fish habitat, and one restoration project
on Adams Creek is not a solution. Road reconstruction
is planned through several of those areas, yet there
is no discussion of how to mitigate further erosion

2

which will inevitably be caused, as in some areas "existing" roads have actually washed away along stream corridors. Acreages of those damaged areas are never shown, though they occupy the major drainages in each VCU. There are also slopes adjacent to the riparian areas mentioned, particularly around Adams Creek and Rodman Bay, which have been so heavily damaged by high-lead hangups that thirty to thirty-five years after logging occurred, there is still only an overstory of alder, and little or no understory over bare mineral soil, exposed rock and gravel, and little or no conifer regeneration. Yet, harvest units are planned adjacent to those heavily-damaged areas in many cases, perhaps exacerbating existing erosion and instability (tree removal, even in partial cuts, impacts ground hydrology as well as stream flow).

2. On page 36, Chapter 3, Volume I, it is claimed that "all of the previously harvested areas have been certified as adequately stocked except 44 acres in VCU 291, and 346 acres in VCU 299." This is a particularly shocking misrepresentation of fact. It does not account for large acreages in VCU's 291, 292, 287 and 300 (Rodman Creek, Adams Creek-Dotfield Valley, Fish Creek and Naxon Creek, respectively) which have observed in hiking and hunting trips. These areas

3

are not "stocked" with any species except red alder, which on page 37 of the same section is not listed as a commercial species, and indeed has never been managed as such on the Tongass - despite its potential for commercial development. The fact that you claim these areas are "stocked," and yet don't incorporate any management plans for future alder sales, indicates the contradictory and short-sighted nature of the current proposal.

Because your past markets have been for hemlock, spruce and cedar, you intend to go on selling these long-rotation, slow-growth species until there are no sizeable stands left where access is economically feasible. Yet where your past mistakes have created large areas where site productivity has been reduced by mismanagement, you claim the areas are "stocked," yet develop no strategy for thinning or marketing the alder resource, because it has not been part of your traditional management plan. This is obviously a

golden opportunity to develop new markets and assist the local economy in creating a value-added production process, as alder is well-suited for uses such as mill-

work, paralling, pellets, furniture, novelties and even barbecue/smoker chips from "pre-commercial" thinnings.

Yet, while the Forest Service was eager to establish

40 years ago, an industry based on old growth clearcutting, pollution, toxic waste, large capital outlays,

4

long-term contracts with large foreign corporations, below-cost sales, and local primary processing only, now it is oblivious to the advantages of developing low-pollution, value-added, labor-intensive, small industries based on older products. This attitude suggests that the agency is indeed more interested in a timber emphasis which focuses on big business, than in innovative, low-input, sustainable wood products programs that actually offer more long-term economic and social benefits to Southeast communities, with fewer environmental risks. Due to past mismanagement the older is here anyway, so why not utilize its short rotation/high yield growth cycle, which offers us this opportunity Now (if not thinned soon, the chance will be lost.)

3. The wildlife sections on the unit cards in Volume II are completely lacking in any specific, useful information, leading one to the inescapable conclusion that no field studies were ever done, and all the wildlife sections in Volume I are based on computer modelling alone. This conflicts with the intention of "site-specific" EIS documentation. In addition, I find no discussion or mention of possible wildlife impacts from helicopter harvest.

4. There have been shown to be serious errors in the current

5

data for Integrated Resource Inventory Mass Wasting Interpretation, which is the basis for landslide mass movement hazard (MMHaz) ratings in the GIS data base. Even Doug Swenson, lacking authority on mass movement hazard in the region, has admitted there are many problems with this data base. So why is it so frequently cited as fact in the document? Isn't it true that the data originated from photo interpretation by inexperienced people, with only 10% of areas checked on the ground?

5. "Storm rainfall" is the maximum amount of rainfall in a 24-hour period, measured in inches or centimeters. In "Mass Wasting in Coastal Alaska" (Swenson, 1989; still the standard text on the subject), a diagram shows that parts of the project area have the highest storm rainfall of any area in Southeast. Swenson goes on to note that this factor is critical because high storm rainfall is associated with increased mass failure potential, especially on steep slopes and ash soils. This is never mentioned in any description of climate or soils in the DEIS, yet would seem uniquely important.

6. In the unit cards in Volume II, soil reviewers in many cases added timber harvest recommendations not practical from a layout/boundary standpoint. For

Example, a recommendation of "No harvest if over 80% (slope) for 100 feet" means the review did not take time to find and delineate where oversteep areas actually occur. Thus no specific boundary alterations are made, and oversteep slopes are left within the designated unit boundary, causing problems and confusion later in layout, and giving a false picture of stand acreage and volume, necessitating EA's later.

7. The Fish Creek Hot Springs is noted as a "special interest area" (Page 68, Chap. 4, Vol. I.) Have any of your ID team members actually visited the springs? Is it not true that two members spent two days trying to find the springs (Clearly shown on USGS topo maps, and location/route described in Sitka District Trails Guide) without success? If this is indeed true, this is indicative of how out-of-touch team members are with actual ground environment of the project area, and with the concept of "site-specific" information. Your team is comfortable with computer models and perhaps with aerial photographs, yet have not actually seen enough of the project area on the ground to be thoroughly familiar with its unique features, its widespread soils problems, its wildlife populations. Computer models are only as reliable as the data going into them and the programs in which they are based. Aerial

photo interpretation requires years of accompanying ground experience to be reliable in our terrain, moisture regime, soils and vegetative environment.

8. Alternatives 1, 3 and 4 show a road crossing almost two miles of muskeg wetland, to connect a proposed LTF site at Shultz Cove with units in the Range Creek area. I would be interested to know how the cost of building this road across two sizable V-notches and a large area of wetland, justifies the benefit of logging those logs - Volume, high-risk units on the north end, most of which are scheduled for helicopter harvest? If "SNAP" was used to analyze this portion of the plan, I would challenge you to compare a cost/benefit calculation by hand, as I don't see how a profitable offering (not below-cost) can possibly be obtained here. - The same for the full-bench, end-haul road in high-risk soils, from the Baptist CP to the plateau on the peninsula between John the Baptist and Nakwasina.

9. Isn't it true that a geologist spent only 1/2 day investigating the Karst area found, and did not visit the stream going underground that was located? Thus it can't be accurately claimed that those 15 no activity planned within 2.2 miles of this

First area (page 4, Chap. 4, Vol. I.) as the full extent of the forest has not been determined.

To summarize, it would appear that your team has compiled a sloppy, incomplete and misleading document, and that the basic flaws are: 1) not enough knowledge of actual ground conditions in a "site-specific" context, and 2) a status quo, business-as-usual perspective on timber subs. Obviously, these are very untimely flaws, showing a callous and uninformed attitude to the expressed desires of our local public, our national interest, and our needs for long-term, sustainable-yield timber management for a healthy industry.

In an area where so much drastic mismanagement in the past is still so evident, and where proposed harvest is so close to Sitka and so critical to subsistence users, this short-sighted approach is particularly unfortunate and ill-advised.

Sincerely,
(signed) M.H. Dalton
Mary Hamed Dalton
Resident of Sitka, Alaska

TOTAL P.09

JOE D. HERNANDEZ
2214 S.W.C.
SITKA, AK. 99835

U.S. FOREST SERVICE

I would like to comment on the proposal N.W. KARANOF TIMBER SALE. I am strongly in favor of the no cutting alternative. In light of the recent outcome of the vote on Proposition 3 and recent no cutting endorsement of the Sitka Fish and Game Advisory Panel, I feel the Forest Service would be obliged to reconsider and re-evaluate this sale. Priorities and values of the forest are rapidly changing despite talk otherwise. Our resources are much more valuable than they have been released as and will be released as in this sale. It is crucial to treat the forest as a whole. What is worth as fish and deer habitat, and, yes, timber.

Sincerely,
Joe D. Hernandez



Northwest Baranof Draft Environmental Impact Statement

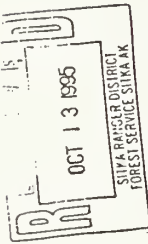
Comment Form

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Julie Anna Dyer
P.O. Box 6157
SITKA, AK 99835

I VOTE FOR ALTERNATIVES
NO CUT IIII

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Signaka Way
Sitka, Alaska 99835



Northwest Baranof Draft Environmental Impact Statement

Comment Form

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*I oppose clear cut logging in the
Sitka land use area. This is my
backyard and not only do I use
it, but I want my children & their
children to be able to use the area!*

I support Alternative #5

*Jane Eidler
P.O. Box 1673
Sitka, AK 99835-1673*

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Signaka Way
Sitka, Alaska 99835

October 13, 1995

NW Baranof Planning Team
Attn: Jim Thomas
204 Siginaka Way
Sitka, AK 99835

Dear Sir:


I am writing to oppose all of the alternatives in the NW Baranof Timber Sale DEIS that include any adverse impacts on the subsistence use of the forest. That is, I am in favor of the "No Action" Alternative. Cutting in this area has already had a significant adverse impact on subsistence. Any further logging will only exacerbate the current unacceptable situation. Demand for deer already exceeds the sustainable supply in all but one of the WAA's and that remaining WAA will reach a point of diminishing returns by the year 2008.

Subsistence users in Sitka depend heavily on this area because it is accessible in the winter (inside waters) when it is impossible to access the more exposed areas on the outer coast. The loss of the NW Baranof area will force us to buy our meat in the supermarket. This will not only impoverish us monetarily, it will also destroy my native culture.

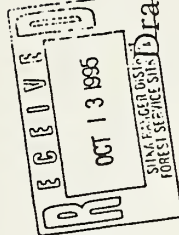
I am including a copy of some of my research on the economics of subsistence for you to include in the record. This paper, "Subsistence Economics: Freedom from the Marketplace", has been accepted for publication in the International Journal of Society and Natural Resources, Volume 9, Number 1 in February 1996.

The US Forest Service's acceptance of the an alternative that favors timber harvest over subsistence is in violation of ANILCA and does a great disservice to the people of Sitka.

Sincerely,


Ronald E. Dick, Ph.D.
Forest Resources

HD 524
95 OCT 13
NWB 29



Northwest Baranof Draft Environmental Impact Statement

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October 13th

I support Alternative 5, the No-Action alternative because I want to protect the small amount of old-growth forest remaining in this area. I believe the forest's most valuable use at this time is to protect habitat for the future. Tourism & fisheries are our long-term future. Cutting timber will provide income for only a short time and will leave no resource base for the future. Selective logging would be a better way to protect habitat. Asst available services was not used in this EIS to evaluate costs to deer and other wildlife. Please utilize scientists from the AK Dept. of Fish & Game more seriously.

Page 282e

2219 Sawmill Creek Hwy

Sitka AK 99835

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Siginaka Way
Sitka, Alaska 99835



Northwest Baranof Draft Environmental Impact Statement

Comment Form

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I support Alternative 5, the No-Action alternative because I oppose clearcut logging in the local Sitka area. This area is my source for healthy berry - raspberry and subistence foods and the nourishment of beautiful land. And I am not alone in this dependence. I which I want is a more profound dependence than that created by an economy based on clearcutting. We cannot live without healthy forests and I don't believe clearcut logging creates that at all.

Mandy Evans
P.O. Box 6071
Sitka AK
99835

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Signaka Way
Sitka, Alaska 99835

Northwest Baranof Draft Environmental Impact Statement

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I support Alternative 5, the No-Action alternative because:
"I oppose clearcut logging in the local Sitka area."

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Signaka Way
Sitka, Alaska 99835

From: K. Ferguson, Jr.
Bayview Apartments
Apt # A. 1804 Alekuk Way
Sitka, AK. 99835

October 15, 1995

To USFS, Sitka Alaska

Regarding the NW Baranof timber sales, Friends of Southeast's Future offers the following comments:

1) We believe the scoping (conducted 1993-1994) was not evident in the DEIS in form of response to written comment at that time. We could find no statements taking into consideration the incredible economic impact of other users in the forest, such as charter boat operators, flight-seeing, fishing industry, and recreation and tourism. Subsistence use in the forest is minimally mentioned. If your scoping method is the foundation for the DEIS and is not thorough, your process will soon crumble and we have no faith in its present condition.

2) No winter range for deer has been identified.

3) The following written scoping comments were not responded to by the USFS in this DEIS:

A) By the Gonzales Family, 8-29-93 "clearcut logging is incompatible with fishing and tourism."

B) By K J Metcalf, 8-30-93 "Look at this project in cumulative perspective - this must include past logging, current projects (Kelp Bay, SE Chichagof, Ushk Bay) and future logging, to well into the next century." This has not been done, and is a significant issue.

C) By Don Muller, 9-21-94 "For the NW Baranof proposed sales, I support the following... small sales for small, local, independent operators (less than 500,000 bd. ft.)" Where has this been addressed in this DEIS?

D) By Loyal Johnson, 10-20-94 "...it is very disappointing that this sale is even being considered."

E) By the City and Borough of Sitka, 10-20-94: "It is hoped that because of the considerable importance of the Nakwasina area for Sitka Hunters and Recreation users, and the valuable and productive deer habitat of this area, that this area be left uncut."

4) In this DEIS chapter 4, pg 51, you've stated how the supply and demand of deer is already impaired. Do not further destroy what deer habitat is left!

5) The obvious change in community response to clearcutting as evidenced by the recent municipal election yielding 1,698 "YES" for Proposition 2, sponsored by this group, and 1,702 against must be recognized in your final EIS.

6) Since this area has been extensively clearcut in the past, we are already experiencing adverse effects on our lifestyles because we must now work hard to protect the rest of the forest and our subsistence from your insanity, compounded by the fact that you have yet to demonstrate your regard for public input in concrete written manner. We strongly demand you, as public servants, adopt alternative 5, since you have failed to provide any other alternatives which include selective cutting.

7) Do your homework. Print ALL your research, taking into consideration the work currently being done by Alaska Fish and Game biologists. Be Honest. Trust us for a change!

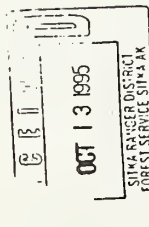
Sincerely,

Friends of Southeast's Future

Claire Johnson
Claire Johnson, member

1705 Saw Mill Creek

Sitka Alaska



Northwest Baranof Draft Environmental Impact Statement

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36 I support Alternative 5
The No Action Alternative
William L. Foster
2810 SMC
Sitka, AK 99835
13 Oct 1995

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Signaka Way
Sitka, Alaska 99835

The Foundation for the Protection of the Common People, Inc.
P.O. Box 3122
Sitka, AK 99835
October 14, 1995

U.S.D.A. Forest Service, Alaska Region
Chatham Area, Sitka Ranger District
204 Signaka Way
Sitka, AK 99835

RE: Comment on Northwest Baranof Draft Environmental Impact Statement ("DEIS")

Dear Madam or Sir:

Please consider this as our organization's formal comment on the above DEIS. I would like to begin by asking that the USFS scrap this project, or in the alternative, choose Alternative 5, the NO ACTION alternative, for the Northwest Baranof Sale area. The DEIS clearly shows, by the Team's own admissions, that subsistence hunting opportunities will be severely restricted under the preferred alternative (Alternative 2). Under the preferred alternative, the USFS predicts a 19% decrease in deer habitat capability. Would the USFS consider a 19% reduction in USFS funding to be significant? Of course, so how can the USFS truthfully claim that a like reduction in deer habitat is not significant to those dependent upon it? The DEIS clearly does not comply with Section 810 of ANILCA. The Project should be scrapped.

Misinformation, disinformation, and ignorance

There are many problems with the North Baranof DEIS. One is the fact that DEIS is merely a piece of "fluff", with no factual substance; it's just a lot of wishful thinking on the part of the USFS. At Chapter 2, Page 1 of the DEIS it states: "On June 4, 1992, shortly after the Northwest Baranof Project was initiated, the Chief of the Forest Service announced that the Forest Service was committed to using an ecological approach in the future management of the National Forests (Robertson, 1992) known as ecosystem management." [emphasis added] After reading the DEIS, it becomes patently clear that no "ecosystem management" was even considered in producing the document, as it is primarily comprised of a loosely written list of feeble excuses, and weak justifications for "getting out the cut", of 50 million board foot of timber... at the expense of subsistence users!

In the DEIS Summary Document (the document most frequently used by residents) the Preferred Alternative is not identified as Alternative 2... the reader is falsely led to believe that the Proposed Alternative (Alternative 1, at 25.5 mmbsf) is the Preferred Alternative. The complete DEIS is full of such obfuscation, and "smoke and mirrors". One has to wade through a full third of DEIS Volume 1, in order to find first mention of the Preferred Alternative (51.9 mmbsf).

K-42

The Project Area was ill-chosen because of the extreme danger of landslides, virtually throughout the area. Table 3-2 (Volume 1, Chapter 3, Page 9, of the DEIS) shows that fully 67,478 acres out of 155,116 in the Project Area are in "High" to "Extreme" danger of mass movement or landslides. Almost 75% of the acreage in the Project area is in, at least, "Moderate" danger of landslides. The NW Baranof Project should be scrapped on this account alone.

At Volume 1, Chapter 4, Page 4 of the DEIS, it states: "Since we did not locate any caves or know that any exist within the Northwest Baranof Project Area, we do not expect any direct, indirect, or cumulative effect on these resources." The USFS "did not locate any caves", because they didn't look. Karst (and with it caves) does exist within the Project Area. It is apparent that there was inadequate work on the ground, in preparing the DEIS.

There has been an atmosphere of disinformation coming from the USFS regarding the impacts of timber harvest within the Project Area. During a KCAW-FM candidate forum on public radio, a question was asked regarding the "2% net decrease in deer habitat capability, over and above the 17% that would occur because of past logging in the NW Baranof Project Area". At that point the program's radio host interjected, "I asked Jim Thomas (NW Baranof Team Leader) how many deer that amounted to, and he said it would be 2 deer" (emphasis added). When one analyzes Table 4-14 (Chapter 4, Page 23) "Resulting Habitat Capability Index for Sitka Black-tailed Deer in the Project Area by Alternative", it is easy to assume that the Team Leader either, (1) wished to down-play the negative effects of logging on deer habitat, (2) simply didn't know how many deer logging would affect and "winged it", or (3) attempted to misinform the reporter. In any event, this behavior shouldn't be condoned. Table 4-14 shows that the 2% reduction in deer habitat capability at issue actually equates to 68 deer, not 2 deer as was stated to the reporter. If this is any indication of the truthfulness and accuracy of the main body of the DEIS, we are all in deep trouble. The Project should be scrapped on this account alone.

Impacts of Logging Camps

It is a well known and accepted fact that wherever logging camps are sited, wildlife and fish populations suffer greatly. In Volume 1, Chapter 4, at Page 28, under the heading of "Logging Camps", the following is stated: "From a wildlife perspective, there are two types of effects associated with an LTF and logging camp. First, there is the potential loss of wildlife habitat as a result of clearing activities for the camp, sort yard and associated facilities. Second, and more importantly, there is the disturbance to wildlife as a result of increase human activity associated with a camp." (emphasis added) In a subsequent paragraph it also states: "Wildlife may be adversely affected by human activity associated with the camps and facilities. This includes disturbance of wildlife use patterns, increased harvest and increased human-bear encounters." (emphasis added) In spite of the foregoing admissions, the section on logging camps ends with the wimpy platitude: "The overall effects of disturbance of the wildlife use patterns are expected to be minor".

Long-Term Productivity

At Volume 1, Chapter 4, page 29 of the DEIS the Team fully recognizes that, "[P]rimary long-term impacts on wildlife result from the loss of old-growth habitat", yet the Preferred Alternative is keyed to the old-growth, high volume, high wildlife habitat value stands in spite of the known damage it will cause to habitat. The DEIS goes on to state: "Sitka black-tailed deer, brown bear, marten, river otter, hairy woodpecker, and brown creeper depend on old growth and would experience decreases in long-term habitat capability, particularly during critical times of the year. Habitat capabilities for brown bear and marten would decline further if roads are left open, resulting in human-related disturbance and mortality"; and, "[C]anopy closure in second growth stands [clearcuts] will result in reduced habitat capability for deer, marten, and brown bear". (bold added) Incredibly, and without any stated basis, the following claim is also incorporated under this heading:

"All wildlife species are expected to be above minimum viable levels within the Ecological Province and their occurrences are anticipated to remain well distributed throughout the Project Area." (Underline added)

Question: Where in the DEIS lies the factual basis for these empty assumptions, expectations, and conclusions?

Answer: Nowhere! In fact, their admissions contradict their claim!

Marine Environment

The USFS Team, at Volume 1, Chapter 4, Page 30 of the DEIS readily admits that, "[T]he potential effects that are of concern at log transfer sites relate primarily to bark deposits which smother benthic organisms"; and, "Little quantified information is available that documents decomposition, flushing, recovery times, recolonization rates, or other information about the longevity of bark and its effects on the marine benthic habitat". Not surprisingly, the Team attempts to "pooh-pooh" the seriousness of bark deposition in the DEIS. This is unconscionable, as benthic organisms are key players in the marine food chain, and comprise a unique and irreplaceable element in the web of life of the Tongass. It is incumbent upon the USFS to err on the side of safety. Here it is admitted that no

basis for a decision exists, yet the USFS makes a decision! It's like shooting in the dark! The NW Baranof Project must be scrapped because of these glaring absences of hard fact upon which conclusions were apparently drawn, or better yet, guessed or wished. No facts, no Project.

Goshawks, Murrelets, et al

Once again, the USFS Project Team admits at Volume 1, Chapter 4, Page 33 of the DEIS that they have not, did not, can not and will not determine, either, the populations or real-life impacts on Northern Goshawks, Marbled Murrelets, and Kittlitz's Murrelets, as well as sensitive marine species. This appalling and admitted lack of data and knowledge, on the part of the Forest Service, of numbers and impacts surrounding these species cries out . . . STOP! How can the USFS go blindly forward with this project? If the USFS is to act in the public interest, the USFS must err on the side of safety and halt this project, at least until some believable data is available.

In closing, please lay his project to final rest, just where it belongs. The NW Baranof Project Area has already suffered too much at the hands of its supposed protectors, the USFS. Even your own weak figures and incomplete, inadequate data belie your claim that no significant impact will occur to deer and bear populations. The community of Sitka DEPENDS on deer for subsistence; act in OUR BEHALF and withdraw your NW Baranof Project.

Sincerely,

Flopan Sever
Flopan Sever, President

Sitka 9/8/95

Fabian Gutter
106 ocean view st.
Sitka Alaska

Concerning the proposed N.W.
Baranof timber sale. As a
hunter I have noticed areas
that have been logged have
very few deer. In area 301
by Makwasine we there is
plains. There is a high population
of deer. One of the wally
is already logged now you
want to log the other one,
leaving it barren and with no
deer. I think these places
are to close to town to
log. I think there is other
ways to make money than
cutting these trees down.
That won't give money for a
long time if ever after being cut.
Sincerely Fabian Gutter

Sitka, 9/8/95

Hansel Claire Grutter
106 Oceanview St.
Sitka AK 99835

To whom it may concern.
I am writing you, concerning the
proposed N.W. Baranof Timber Sale.
As a very ^{avid} hiker, a wife and
mother of hunter, and a lover of
this beautiful, wild country where
we live, I am urging you, to
protect our very last pockets of old
growth forest we still have.
Preserve the deer habitat, allowing
subsistence hunting and manage
the environment in the best possible
way. Wait for 2nd growth, to be
harvested, but please, leave the
unique, precious old growth still
surviving, the way it is -

Sincerely, Hansel Grutter

(P.S. Alternative 3 Maps for Draft Environmental
Impact Statement preserves almost 5000)

Theo Grutter

106 Oceanview St

Sitka AK 99835

Sept. 12th 95

To the people who have the lives and wellbeing of our trees in their hands.

Testimony re: N.W. Baranof Timber Sale.

Many of us we have come to live here because we love to be surrounded by
this wonderful - and to be again and again inspired by it.
It is especially in those valley bottoms and flats proposed now for sale
where the high stands of spruce live which give refuge in winter to most
of the animals. And we have already felled much of those stands around Sitka.
And then would it be reason enough to kill those trees just because killing
trees provides jobs? - This would be bad business for our community. After all,
there is no emergency; nobody is without a roof, nobody without paper to
write his or her mom.

Defend, if you can, these trees. Let them be alive and stand - enough of
clear cutting around here. Your grandchildren will hug you for it. Soon such
unique untouched land will be worth its own weight in gold.

Hansel Grutter

(I have been logging and fishing in Sitka now for 38 years - to live in such
surroundings, what a treat!)

Northwest Baranof Draft Environmental Impact Statement

Comment Form

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3. At this time I prefer alt #3

I do not support alt #5

Cheresa Holm
325 Cascade #14
P.O. Box 1607
Sitka, AK 99835

747-7847 home
747-6292 work

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Signaka Way
Sitka, Alaska 99835



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3. I support Alternative 5.

because if you clear cut these trees you will destroy the natural habitat of the numerous creatures that live there. Including me.

Jason Herman
PO Box 245 Sitka AK
Oct 12 1995

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Signaka Way
Sitka, Alaska 99835

Northwest Baranof Draft Environmental Impact Statement

Mark Jacobs, Jr.
P. O. 625
Sitka, AK. 99835
October 12, 1995

Mr. James Thomas, Team Leader
USDA, Forest Service - Sitka Ranger District
204 Signaka Way
Sitka, AK. 99835

RE: Northwest Baranof
Timber Sale

Dear Sir:

There are many factors in my recent decision to oppose any logging as proposed in Northwest Baranof Timber Sale. One is the decision on Ushik Bay Sale that I opposed because it encroaches on Hoonah Sound. It cannot be denied that all logging impacts subsistence, high recreation and scenic values.

I have voiced many reasons in my comments, testimony and blunt statements as to why my attitude has changed to oppose Woods Product Manufacturing Facilities. Their public relations with longtime employees at the Sitka Pulp Mill has been a cruel one. They replaced trained and skilled employees and even after union-busting, ill treatment continues, lawsuits by former employees for back wages have been successfully litigated and yet the company in delay-tactics is continually appealing.

Since the 50-year Timber supply contract has been canceled by the U.S. Forest Service with the Alaska Pulp Corporation, there should be a halt to all timber sales in the former contract areas.

I also object to export of our natural resources that contributes to our national deficits. Much more can be said about our road to economic destruction by the exporting of our resources, our industries and, in fact, our national sovereignty.

Submitted,

Mark Jacobs Jr.

Mark Jacobs, Jr.

Comment Form

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I AM IN SUPPORT ONLY OF ALTERNATIVES - NO CUT.
THIS DEIS DOES NOT PROTECT WETLANDS.
DRAINAGE AREAS. THE MESSAGE USES IS GIVING ME
BUY WANTING TO GO INTO THESE WATS TO CUT
WHAT YOU PASSED OVER YEARS AGO, IS THAT THERE
LESS TIMBER, IN LOWER VOLUMES. YOU MUST STOP
EXPLOITING THE FOREST FOR TIMBER. USE OTHER
PRODUCTS - THERE'S NO MORE VOLUME 7, LITTLE
VOLUME 6, STOP CLEARCUTTING. PLAN FOR 7
GENERATIONS.
Charles Johnson
PO BOX 6384

Mail or deliver this form to:

USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Signaka Way
Sitka, Alaska 99835

01
K-47

The Northwest Baranof Draft EIS is obviously the result of alot of hard work by Forest Service employees. However, it is the lack of information that is troubling.

I have worked on a purse seiner for over twenty years in the Sitka area and have seen the amount of purse seine openings dramatically decrease in the NW Baranof Project area. When I read the EIS there was little or no information about the impact of the proposed sales on commercial fisheries. I did find a little table on catches in Chapter 3 on page 75. This past summer there were only a few openings in Nakwasina which was once the mainstay of purse seiners during the last few weeks of the season. Fish and Game has indicated that these runs are in trouble because of past logging practices. Therefore I think it is vital that you consider the impacts of past logging when planning sales.

I don't think you have used the best available science in preparing your Draft EIS. I am referring to the Anadromous Fish Habitat Assessment Report released in January 1995. In that report it stated that more no harvest buffers are needed on Class III streams and it also talks about the dangers of harvesting timber on steep slopes. In VCU 301, Unit 9031 you have a similar situation, a steep slope and an unprotected Class III stream.

I feel there needs to be more studies on the effects of past logging on resident salmon populations in the NW Baranof Project area and these studies should include the projected decline of those salmon populations due to damage to habitat caused by previous and planned logging.

Regarding subsistence, I don't feel the Draft EIS reflects the current scientific knowledge of how the closure of the second growth canopy affects the deer population. In Chapter 4, Page 52, it states that increased demand and slightly reduced deer habitat capability will result in subsistence demands not being met by the year 2008. What does slightly reduced deer habitat capability mean? Does that model include the closure of the forest canopy in existing clearcuts? I don't think that the Draft EIS accurately portrays that impacts of logging camps on subsistence or how the creation of roads to previously inaccessible areas impacts mountain goats, bears and deer. Mountain goat hunting is typically done by those hunters who have the tortitude to climb the peaks in search of games. I didn't find any information on how roads leading to Annahootz or other popular goat hunting areas would impact the goat population. Instead I found references to the positive benefits of new ramps for ATVs. Making areas accessible to ATV riders has a huge impact on resident game populations which are not necessarily beneficial and I would like to see that reflected in the EIS.

The Forest Service needs to make every effort to protect the impact of past logging when preparing their EIS. I don't feel you have done this so the only alternative I can support is number 5, the no action alternative.

Clarice Johnson
506 O'Leary St
Sitka, AK 99835

Sitka, AK
Sept. 28, 1995

James Thomas, Team Leader
USDA Forest Service-Sitka Ranger District
204 Siglinaka Way
Sitka, Alaska 99835

Dear Mr. Thomas,

I recently attended a Sitka Fish & Game Advisory Committee meeting where three members of your staff gave an excellent presentation on the NW Baranof sale. Their presentation was well organized, made good use of visual aids, and was very cordial and helpful.

I use the area proposed in this sale for subsistence hunting and fishing, recreational hunting and fishing, and commercial fishing. My favorite hunting areas will be affected by this sale. I am writing because I am very concerned about the alternatives proposed.

In general I believe the forest service should not be proposing clear cut logging in the areas closest to Sitka. The value of these areas for subsistence and recreation for the next 100-200 years must exceed the value of these places for timber harvest.

Since I recognize that these areas may be clear-cut in spite of my general opposition I have some specific recommendations where I am most concerned about the proposals.

In VCU 301 I am strongly opposed to the proposed new road and log transfer facility. This road will cross one of my favorite November and December deer hunting areas near a protected anchorage for my skiff. Please do not build this road. If you absolutely need to access the timber units up Lisa Creek then use the previous Log Transfer Facility as proposed in Alternative 2.

In VCU 299 I am adamantly opposed to the helicopter logging units 8061, 8062, 8063, 8064, and 8065. A trail I commonly use to travel to the high ridges for deer hunting in August, September, and October goes right through proposed cuts 8061 and 8062. Helicopter logging in this area if it is done at all should be limited to the months of February, March, June, and July. Otherwise the noise of the helicopters will scare the deer, interfere with fawning, and ruin the hunting experience and success. Proposing these cuts was a terrible mistake and shows a terrible lack of sensitivity to hunters in the Sitka area. Please drop these units from your selection.

156
In VCU 300 I recommend that you stay out of this VCU for any future logging. It is my belief that this is the single most important VCU for subsistence deer harvest in the Sitka area and probably in Southeast Alaska. If you are at all sensitive to subsistence values then you will not propose any clear-cut logging in this area. My hunting partner and our families took over 20 deer from this area last year. Do not propose clear cut logging in this area.

153
In VCU 302 I used to hunt in the areas proposed for harvest but do not commonly hunt there anymore due to the crowded conditions. While I may not personally be affected by these cuts I am sure lots of other hunters will be displaced. I recommend alternative 3 be adopted for this area. Alternative 2 and 4 involve way too much activity in the area.

116
I am glad to see no activity proposed for VCU 287. Fish bay creek seems to be still suffering from a previous entry. When I was up the creek this fall it was carving a new channel through the alders. Perhaps some channel stabilization work needs to be attempted.

26
VCU 288 is accessed by two of the best anchorage's in the area, Schultz Cove and Baby Bear Bay. I have hunted cutting units 4081, 4082, and 4083. At a certain time of year this area provides one of the best hillside hunts in the area for large deer. I recommend the no cutting option in Alternative 2 for this area. If you must enter this VCU then I strongly recommend that you not cut these units.

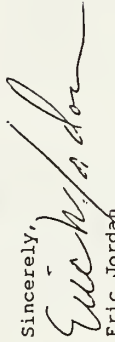
204
I have not hunted in VCU's 289, 290, and 291. It appears to me that VCU 291 receives the least hunting pressure in the area due to the difficult access and no good spot to leave a skiff or anchor a boat. I would recommend more harvest in this area than in VCU 299 or 300.

After going through this whole process and looking over all the alternatives it is clear to me that Alternative 3 with exception of the proposed cuts in units 4081, 4082, and 4083 is much more preferable than any of the other alternatives. It proposes less new roads and concentrates the activity away from town in a VCU which is not as important for subsistence and recreation as VCU's closer to town. Alternative 4 is completely unacceptable to me and many of the cutting units in Alternative 1 are unacceptable.

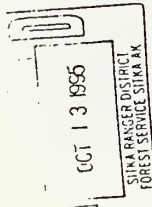
In conclusion, I am adamantly opposed to the new road proposed in Alternative 1 and 4 for VCU 301. I am opposed to all of the proposed clear-cuts in VCU's 299 and 300 especially units 8061-8065. I am opposed to cutting units 4081, 4082, and 4083 in VCU 288. I am glad you staying out of VCU 287 in all the proposals. I recommend more volume out of 291 as proposed in Alternative 3. In general I oppose clear-cut logging in the areas nearest Sitka. I prefer alternative 3 to any of the other alternatives and hope my specific comments will make a difference.

If any of your staff has any questions on my comments I can be reached at 747-6743 during most of the fall.

Sincerely,


Eric Jordan
103 Gibson Place

cc:
Sitka Fish & Game Advisory Committee
Alaska Dept. of Fish & Wildlife Conservation
Sitka Conservation Society



Northwest Baranof
Draft Environmental Impact Statement

Comment Form

The USDA Forest Service is obtaining public comments on the Northwest Baranof Draft Environmental Impact Statement. You may use as many of these forms as necessary to provide written comments on the draft EIS. Please deliver or mail it to the Forest Service. The Comment Period has been extended. Comments will now be accepted until 5 PM on October 16, 1995.

3. I support alternative 5 -
the No Action alternative.
Please don't destroy our subsistence base.

Nancy Knapp

Nancy Knapp
137 Riggs Rd
Sitka AK
99835

October 13, 1995

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Sigmunka Way
Sitka, Alaska 99835

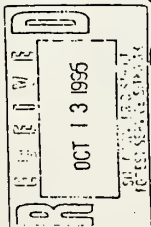
TELEPHONE CALL RECORD

PERSON (NAME) or (CALLING) Ron Kruger
CALL (NUMBER) or (RECEIVED) BY TED Allie
DATE AND TIME 8-17-95 09:45 AM
REGARDING: NWB Timber Sale Project

DISCUSSION:

Ron, said NO. Leave it Alone.
Don't Hack it anymore. He is a
Environmentalist, and he hates
Boats out in the Tanning area. He doesn't
want another Kruger. I explained
that we were proposing partial harvest
in some areas and that was with the
intent to make a healthier forest with
and heavy logging holes (clear cuts).
He said he isn't against healthy forest. I
ask him if he would explain why he didn't want
us to harvest in northwestern Baranof he
said he didn't want another Kruger and
that was what he feared would happen.

ACTION REQUIRED: Consider this comment when we
do the final EIS on NWB



Northwest Baranof Draft Environmental Impact Statement

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3. I support Alternative 5 -- the no action alternative. I oppose clearcut logging in the Sitka subwatershed.

Kathy Kyle
2213 SMC
Sitka AK 99835

K-51

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Signaka Way
Sitka, Alaska 99835

1:50 PM 10/13/95

Northwest Baranof Draft Environmental Impact Statement

Comment Form

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3. I support Alternative 5. Mostly because of disturbing the ecological chain: destroying habitat & natural provisions for local deer, small game, bear, & the fish.

Paul J. Moshel
P.O. Box 6103
Sitka, AK 99835

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Signaka Way
Sitka, Alaska 99835

Valorie L. Nelson
4608 H.P.R.
Sitka, AK 99835
(907) 747-5030

October 15, 1995

USDA Forest Service
Tongass National Forest/Chatham Area
Northwest Baranof Planning Team
204 Signaka Way
Sitka, AK 99835

Attn: Gary Morrison

Re: Draft EIS and Substantance

Dear Mr. Morrison:

As a forty year resident of Sitka, I would like to thank you for allowing me to testify in favor of alternative number two at the Centennial Building.

After doing more research and talking with a few people who use these areas more often than myself, I would even be in favor of the alternative that includes Lisa Creek. I believe it was number 4.

My reasoning is as follows: In my opinion, there has been no adverse impacts on the deer or fish populations caused by past clearcutting in this area. In fact it appears to me that the opposite has occurred, as the hunting and fishing are much better now than I remember them being when I was a child. It is also more eye-pleasing to view the areas that have been clearcut and are lush and green versus the old-growth areas where many trees are dead and dying.

My original thought when I testified was that your number two alternative was a better choice because it would impact fewer people, as the Rodman Bay area is much harder for some to get to due to the distance. However in talking with a number of people who have hunted and fished in the Katlian/Nakwasina area, they prefer the clearcuts, as do the deer and would prefer that the area be clearcut.

Due to the lack of job opportunities since the APC shutdown, two of my seven brothers and sisters have been forced to leave town. It is my fear that more of my family will be forced to move away because we are listening to many people who have spoiled their backyards elsewhere due to lack of planning or whatever reason who now want to "save" us from their mistakes. We have already seen the impacts of previous clearcuts and many of them are positive, please do all you can to come to some decision that will allow industry that is timber related to continue in our community.

Sincerely,

Valorie L. Nelson

Valorie L. Nelson

Foy J. Nevers
2618 Halibut Point Road
Sitka, Alaska 99835
Telephone 907-747-3469

October 11, 1995

James Thomas, Team Leader
USDA Forest Service - Sitka Ranger District
204 Signaka Way
Sitka, AK 99835

Re: Northwest Baranof Timber Sales

I am a firm believer that commercial timber harvest does not preclude subsistence use of the forest resources, especially in the vast area around Sitka.

I believe that clear cutting/patch cutting is the way to go for several reasons including the reduced number and spread of areas temporarily disturbed, and the reduced exposure to blowdown which can be expected with spotty selective cutting in the Southeast Alaska environment.

Sitka has been my home since 1959, and I lived in Ketchikan for three years prior to coming here. I have hunted and fished extensively all of those 39 years. Most years, I have taken the full bag limit on deer to help feed my family and friends. I have at times taken goat and bear as well. In the winter time, I have trapped in recent years. I am an avid fisherman in both salt and fresh water, both for food and catch and release. Consequently, I spend a lot of time in the outdoors, which I thoroughly enjoy. Past timber harvests have not reduced my being out there-in fact, I have utilized logging roads for access, even after the alder has grown up on them.

I recognize the skills of US Forest Service staff to analyze conditions existing in specific sites and to make appropriate best judgment about timber harvest practices. I also appreciate their sensitivity to the valid informed input of experienced local residents regarding specific sites which might be set aside from harvest.

Sincerely,

Foy J. Nevers
Foy J. Nevers

Northwest Baranof Draft Environmental Impact Statement

Comment Form

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I support Alternative 5

During the time I've lived in Sitka I've grown to appreciate the lush wildlife this great island has to offer. It is unfortunate that much industrial growth to ~~be~~ has stripped the land of its natural beauty. The ~~states~~ that rely on the forests of Baranof island for survival have no say in this matter. We the people have a greater responsibility to preserve this land that has given so much to our existence. Current logging and large scale logging methods in the Sitka area will continue to unbalance the ecosystem that we and other species depend on. We are not in control of nature, nature controls us. If we continue to strip this great land we will only be taking away from ourselves in the long run. Please take care of this precious land that I and others like me have grown to love.

*Mike Nichols
General Delivery
Sitka, Alaska 99835*

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Signaka Way
Sitka, Alaska 99835

Northwest Baranof Draft Environmental Impact Statement

Comment Form

The USDA Forest Service is obtaining public comments on the Northwest Baranof Draft Environmental Impact Statement. You may use as many of these forms as necessary to provide written comments on the draft EIS. Please deliver or mail it to the Forest Service. Comments will be accepted until 5 PM on October 2, 1995.

My choice of alternative for NWB sale is the NO ACTION option. That is no timber sale should be held because all other alternative impacts and combination of impacts are unacceptable to me. Thank you for this opportunity and the hard work of your staff to present the information. Their role in serving the public in this way is equally important as serving our users in the timber industry. There are the public's interests. Paul Post
Bog 6513
Sitka 99835
747-5428

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Signaka Way
Sitka, Alaska 99835



October 16, 1995

United States Forest Service
Sitka Ranger District
Sitka, AK 9983

To Whom It May Concern:

On Friday, 10/13, The Daily Sitka Sentinel published an article by Phil Janek, Regional Forester. Forest Service Pushes to Finish Tongass Plan, stating that the Forest Service is giving additional emphasis to many important issues, including: Viability of wildlife/old-growth habitats; ecosystem integrity; social, economic, cultural values, and industry trends in tourism, timber and fisheries in revising TLMP. I thank Mr. Janek for writing the article, and I applaud the continuing efforts of the Forest Service to develop an environmentally sound plan that will also meet the needs of the forest's multiple users.

As a 14 year resident of Southeast Alaska, and for the past eight years, the owner/operator of an ecotour charter business (which includes sportfishing), I am personally and professionally concerned that the Tongass be managed for the multiple uses being considered by the Forest Service at this time. Regarding the proposed Northwest Baranof timber sales, I am in favor of: Alternative 5--no cutting, no roads, at least analyses of all impacts are as complete, accurate and unbiased as they can be.

Thank you for the opportunity to comment on the issue of proposed timber sales on Northwest Baranof Island.

Sincerely,

Barbara Bingham
Barbara Bingham, President

P.O. Box 6112, Sitka, Alaska 99835-6112
907/747-5777 Fax 907/747-3462

NORTHWEST BARANOF DRAFT ENVIRONMENTAL IMPACT
STATEMENT COMMENTS.

THIS LETTER RELATES SOME OF MY CONCERNS WITH THE
~~THE~~ ~~BARANOF~~ ~~DRAFT~~ ~~EIS~~

NORTH WEST BARANOF DRAFT EIS.

THROUGHOUT THE DRAFT EIS, THE FOREST SERVICE DID
NOT USE THE BEST AVAILABLE SCIENCE. IN THE

DRAFT EIS, THE ANADROMOUS FISH STUDY WHICH WAS
COMPLETED IN JANUARY 1995 WAS MENTIONED BUT

THERE IS NO EVIDENCE THAT IT WAS USED AT ALL.

I HAVE SPOKE TO A RESEARCH BIOLOGIST FOR THE
NATIONAL MARINE FISHERIES AND HE WAS QUITE AWARE
THAT THE FOREST SERVICE SHOULD BE FOLLOWING
THE ANADROMOUS FISH STUDY. THIS IS AN EXAMPLE OF
NOT USING THE BEST AVAILABLE SCIENCE.

2 I SPOKE TO THE ALASKA DEPARTMENT OF FISH AND
GAME IN SITKA AND WAS INFORMED THAT THE MODELLING
FOR DEER POPULATIONS IN THE AREAS OF THE NORTHWEST
BARANOF TIMBER SALE DO NOT INCLUDE ANY PROJECTIONS
FOR A DECLINE IN DEER POPULATION DUE TO PRIOR TIMBER
HARVEST IN THESE AREAS. THIS IS AN EXAMPLE OF

NOT USING THE BEST AVAILABLE SCIENCE. THE ALASKA
DEPARTMENT OF FISH & GAME WILL BE ABLE TO DIRECT YOU
TO STUDY'S REGARDING DECLINE OF DEER POPULATIONS DUE TO
LOGGING AND THE TIME SCALE THAT THE DECLINE AND
LATER RISE ~~OR~~ ~~THE~~ ~~POPULATION~~ OF THE POPULATION TO REAR
PREVIOUS LEVELS WILL BE EXPECTED TO OCCUR.

3 ALTERNATIVE 2 SHOWS AN INTERESTING
FORESTRY MANAGEMENT PRACTICE IN VCU 292 WHERE
A STRIP OF BEACH OF APPROXIMATELY 1 MILE WAS NOT
~~BEACH~~ HARVESTED IN A PREVIOUS TIMBER SALE. THIS
APPEARS TO BE THE ONLY UNHARVESTED ACCESS TO THE
BEACH FOR ~~THE~~ DEER POPULATIONS FOR APPROXIMATELY

2 MILES TO THE NORTH EAST AND APPROXIMATELY
4 MILES TO THE SOUTH WEST ~~THE~~ ~~BARANOF~~ ~~DRAFT~~ ~~EIS~~
~~THE~~ HARVEST AREAS 3012 AND 3011 WILL EFFECTUALLY
CLOSE OFF THIS BEACH ACCESS. PLEASE LET ME
KNOW WHAT SCIENCE DROVE THE DECISION TO
CREATE THIS SCENARIO.

4 IN CHAPTER 4 PAGE 95 VOLUME 1 UNDER THE
TITLE OF COMMERCIAL FISHING INDUSTRY IT IS
SAID THAT "CURRENT STANDARDS AND GUIDELINES FOR
TIMBER HARVEST ACTIVITIES ARE EXPECTED TO
LIMIT ADVERSE EFFECTS ON FISH HABITAT AND
FISH POPULATIONS. JOBS IN THE FISHING INDUSTRY
ARE NOT EXPECTED TO CHANGE DUE TO
IMPLEMENTING ANY OF THE PROJECT ALTERNATIVES.
THIS IS A VERY GENERAL STATEMENT AND I
WOULD EXPECT THAT YOU CAN BETTER EXPLAIN
THIS USING THE BEST AVAILABLE SCIENCE.
I LOOK FORWARD TO YOUR RESPONSE TO THESE
~~THESE~~ COMMENTS

THANK YOU FOR YOUR EFFORTS IN PREPARING
THIS DRAFT EIS

RESPECTFULLY

ROBERT REID

OCT 16 '95 17:04 SITKA 99035

051 P81

Richard E. Rogers
PO Box 3136
Sitka AK 99835-3136

October 16, 1995

USDA Forest Service
Tongass NF-Chatham Area
204 Siginaka Way
Sitka AK 99835

Subject: Draft EIS NW Baranof Timber Sale

I support any of the four alternatives. I do not support alternative five of no action. If I had to choose between the four choices I would select alternative three. It is less visible to Sitka and would give the USFS a chance to prove to those in opposition that you can proceed in an environmentally sensitive manner.

Thank you for allowing me to be heard.

Richard E. Rogers

Richard E. Rogers

September 28, 1995

Gary A. Morrison
Forest Supervisor
U. S. Forest Service
Chatham Area
204 Siginaka Way
Sitka, AK 99835

Re: 1950

Dear Mr. Morrison:

I wish to express my opinion regarding the Northwest Baranof Timber Sale(s), the subsistence use in the project area and subsistence use in general. I feel that there is no demonstrated need for further analysis and that harvesting timber should be given priority in the project area. Timber harvesting under alternative 1, 2, 3, or 4 will not interfere with the traditional subsistence use of the area nor will it detract from the use of the area for hunting and fishing by non-subsistence users. Those of us who depend upon timber for our income feel that logging and subsistence are not mutually exclusive and that coexistence is a viable option. The continued removal of lands from the timber base for environmental and local subsistence considerations is further eroding a declining timber economy and increasing unemployment in the Southeast.

I would like to encourage you to choose alternative 2 or 4 as soon as is practical after the extended comment period expires.

Sincerely,

John W. Rivers
John W. Rivers
Cube Cove #29
Juneau, AK
99850-0360

K-56

Box 1110
Sitka, Alaska 99815
October 10, 1995

Jim Thomas
NW Baranof Team Leader
Sitka Ranger District, USFS
204 Siginaka Way
Sitka, Alaska 99815

Dear Mr. Thomas:

Please accept the following comments for the NW Baranof DEIS record.

During the time period when this document was prepared, I attended scoping meetings, progress meetings, briefings, and the two formal hearings in September, 1995.

I am disappointed, that despite constructive comments from the public about the importance of subsistence use in the NW Baranof area - a point made over and over again - that the DEIS does not seriously address this concern, nor make "best science" recommendations to protect subsistence. It is negligent or worse that the subsistence data submitted by the Alaska Department of Fish and Game, including Maps, is not included nor addressed in the DEIS. Subsistence is a key issue identified during scoping and should have received comprehensive treatment under each of the alternatives.

I am critical of the Forest Service for not identifying their "Preferred Alternative" in the DEIS Summary document, which was mailed to the public. The Forest Service printed only one sentence (on page 2-25 of the large volume I) in the entire hundreds of pages identifying their preferred action. I believe this misled the public, particularly since Alternative 1 was labeled "The Proposed Alternative". No definition of terms "proposed" versus "preferred" were included in the summary. Thus a normal reader would be expected to draw an inaccurate conclusion that Alternative 1 (the Proposed) was what the Forest Service was presenting to the public as the Agency choice of actions in the DEIS. I consider this omission to be highly significant. I disagree with your statement to me that this is merely a "semantic" problem.

I support the no action Alternative #5.

Lee M. Schmidt
Lee M. Schmidt

RAVEN, MOSS AND DEVIL'S CLUB
Winkout, 10 x 7 inches
© Erna Zeffert, 1989

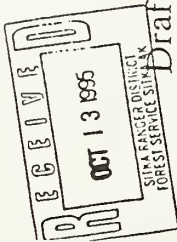
As a life time Sitka
comment on the Northwest
Baranof timber management proposal
is: I strongly support
Alternative #5 the no-action
plan.

I find the document poorly written
and lacking in critical scientific data
and info, subsistence considerations
et...

Please cast my vote for
Alt. #5
Lee M. Schmidt
Siginaka, Alaska



TO
US Forest Service
Sitka Ranger District
Comments for NW Baranof
Timber Proposal
201 Siginaka
Sitka, AK 99835
RECEIVED
OCT 17 1995
SITKA RANGER DISTRICT
P.O. BOX 1110
SITKA, AK 99815



Northwest Baranof Draft Environmental Impact Statement

Comment Form

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1300pgs

I support Alternative 5, the No-Action alternative because I oppose clear cut logging and large scale logging methods in the Sitka local use area. I enjoy this area as it is now, for recreation & hunting, etc. Deer populations in the NW Baranof are already stressed from previous clearcuts. The demand for deer already exceeds the supply. I want to protect the subsistence deer population. I want to protect the small amount of old growth forest remaining on Baranof Island. Please let the forests be. It's so beautiful. Its value is infinite, endless, & timeless.

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Siginaka Way
Sitka, Alaska 99835

as it is
Andrew Scorzelli
General Delivery
Sitka, Alaska
99835

October 16, 1995
1706 Edgecumbe Drive
Sitka, AK 99835

RE: Comment on NW Baranof DEIS

Dear Sir:

I've gone through the NW Baranof DEIS and I have found that it does not provide any sound argument in favor of the Preferred Alternative. I ask that the USFS adopt Alternative 5, the NO ACTION alternative. It is very clear that if the USFS goes ahead with the Preferred Alternative, wildlife habitat will suffer long-term harm. Subsistence values are not adequately protected by any of the alternatives. Section 810 of ANILCA is not satisfied by your DEIS.

Sincerely,

Florian Sever
Florian Sever

October 16, 1995
1706 Edgcombe Drive
Sitka, AK 99835

RE: Comment on NW Baranof DEIS

Dear Sir:

I have reviewed the NW Baranof DEIS and I have found that it provides an excellent argument for Alternative 5, the NO ACTION alternative. It is very clear that if the USFS goes ahead with Preferred Alternative, wildlife habitat will be harmed. Subsistence values are not adequately protected by any of the alternatives.

Sincerely,

Patricia Sever
Patricia Sever



City and Borough of Sitka

100 LINCOLN STREET • SITKA, ALASKA 99835

October 16, 1995

James Thomas, Team Leader
USDA Forest Service Sitka Ranger District
204 Signaka Way
Sitka, AK 99835

Dear Mr. Thomas:

I have reviewed the Draft EIS for the Northwest Baranof Timber Sale for consistency with the Sitka Coastal Management Program. Several sites within the geographic region of the Timber Sale are Special Management Areas in the Sitka Public Use Management Plan. While not closed to logging, these areas have been identified as among the most outstanding, site-specific recreation and/or subsistence use areas within the Sitka Coastal District. These areas should be given maximum consideration as being very important for recreation and subsistence uses, and any minimization of logging activities in or adjacent to these areas would be preferred. The Special Management Areas in the Northwest Baranof Timber Sale area include:

- Big Bear/Baby Bear Bays State Marine Park;
- Fish Bay Hot Springs and Trail;
- Nakwasina Passage to head of Nakwasina Sound.

Attached are the details and boundaries of these SMA's for your reference. Logging and roads adjacent to the Big Bear/Baby Bear Bays State Marine Park and Fish Bay Hot Springs and Trail would primarily impact deer hunting, although the roads and harvest units close to these locations would cause displacement of deer, noise, and disruption to recreation and subsistence users of these areas.

Nakwasina Bay and Passage is probably the most heavily used area for recreation and subsistence in the entire Sitka Coastal District. Even though the logging units 301 and 302 are outside the Nakwasina SMA, the impacts on Nakwasina Passage and Sound under Alternative 2, the Preferred Alternative, would be substantial and adversely impact recreation and subsistence users and decrease deer habitat in the John the Baptist Bay and Lisa Creek areas. Keeping all logging activities out of the Nakwasina area would lessen many users' concerns about this very important recreation and subsistence use area.

Mr. James Thomas
October 16, 1995
Page 2

The logging proposed for Unit 300 in Alternative 1 would cause even greater impacts on deer habitat and populations and displace a significant number of Sitka subsistence and recreation deer hunters and also potentially threaten goat populations. Likewise, logging in Unit 288 in Alternative 1 would also have negative impacts on recreation and subsistence users in the Big-Bear/Baby Bear Bays State Marine Park.

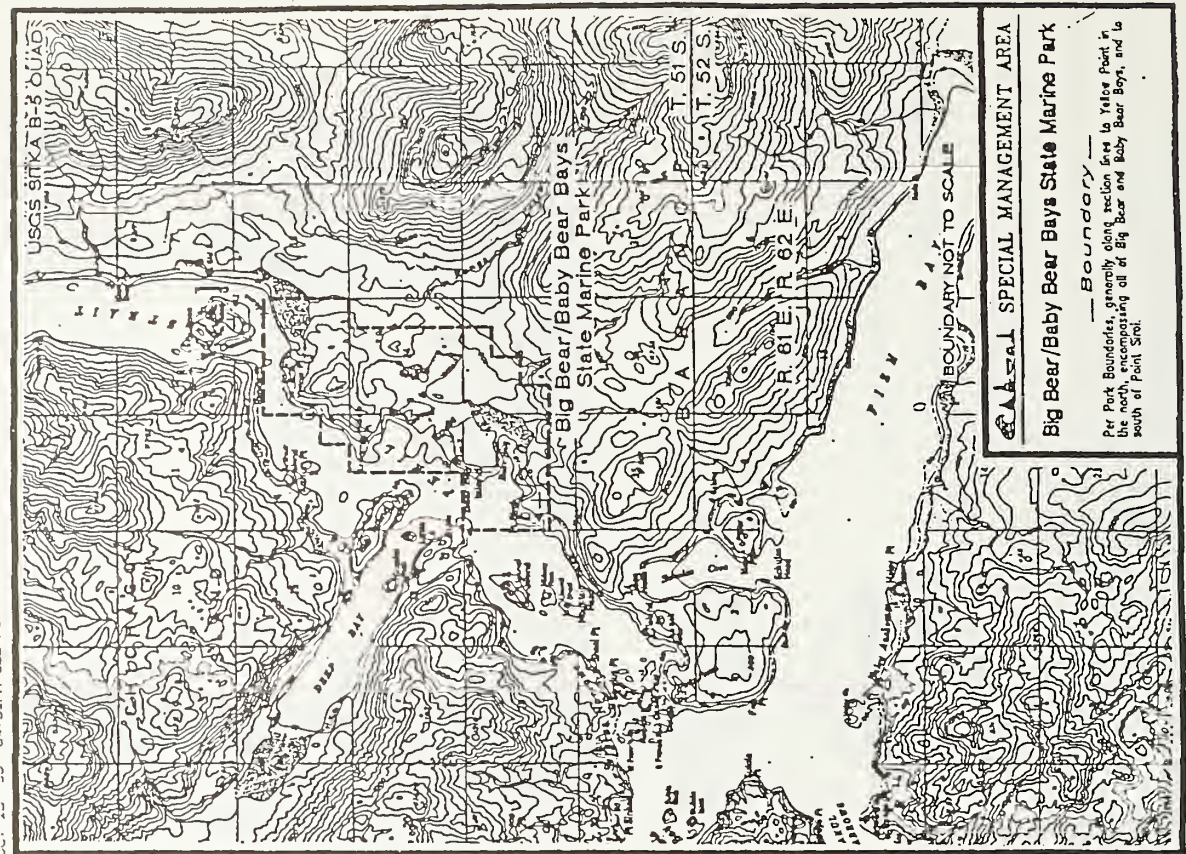
Proposed activities to the north of Big Bear/Baby Bear Bay State Marine Park, in the Deadman Reach and Rodman Bay area, have less potentials to cause significant disruption to other users or major habitat problems within the periphery of the Sitka Coastal Program.

Of the alternatives, it would appear Alternative 2, the Preferred Alternative, is preferable except that VCU 302 will be heavily harvested and will cause adverse impacts to both St. John's Bay and Nakwasina Passage. In the alternatives which have a log transfer facility in Schulze Cove, the recreation cabin on Piper Island would be adversely impacted, although this impact would be less long-term than the logging of harvest area 288.

While the project appears consistent with the Sitka Coastal Program, the Planning Team's consideration of alternatives which would protect existing uses to the Sitka Coastal Program's Special Management Areas, as well as major recreation and subsistence use areas within the Sitka local area, would be preferable.

Thank you for the opportunity to comment.

Sincerely,
Marlene A. Campbell
Marlene A. Campbell
Coastal Management Coordinator
cc: Dave Hardy, ADP&G
Christine Valentine, ADGC

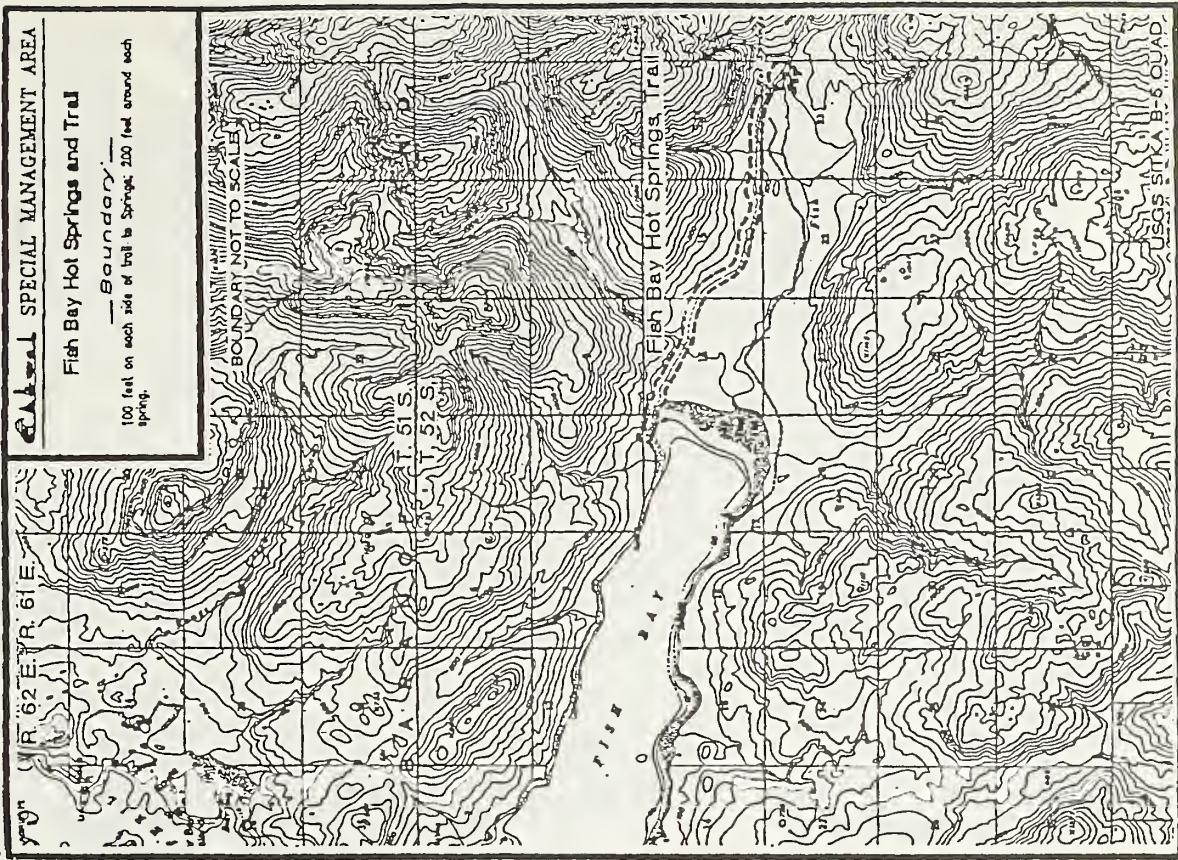


Big Bear/Baby Bear Bays State Marine Park

Big Bear/Baby Bear Bays State Marine Park consists of 733 acres of islands and relatively flat coastal lands from elevations of 100 feet to 300 feet, with most of the land below 100 feet. It is located 26 miles north of Sitka to the north of Sargus Narrows at the west entrance to Pazil Strait. This is one of the only safe anchorages in the area, adjacent to the only inside boat route to Sitka, and provides protection from winds and treacherous tidal currents. Sitka residents and travelers use the area for fishing, hunting, kayaking, camping, beachcombing, and wildlife viewing. There are several good anchorage areas and campsites, particularly in Baby Bear Bay. The large intertidal and muskag area behind Big Bear Bay is excellent habitat for waterfowl and deer. There is also excellent hunting to the north near Range Creek. As a State Marine Park, the area is not subject to timber harvest, and recreation and habitat values will be maintained.

Boundaries:

per Park boundaries, generally along section lines to Yellow Point in the north, encompassing all of Bear and Baby Bear Bays, and to south of Point Sitol.



Fish Bay Hot Springs and Trail

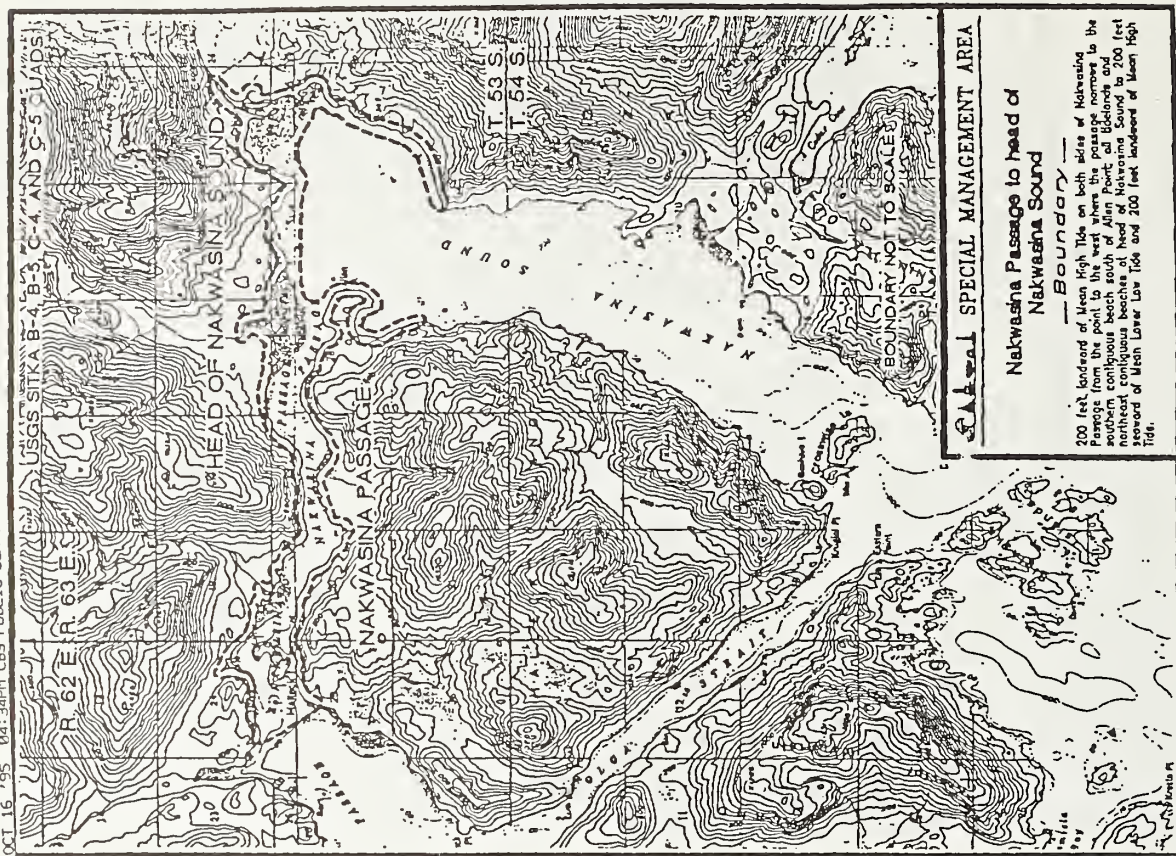
Fish Bay is located northeast of Nakwaina along the main "inland passage" route to Sitka. It is included for its hot springs but also receives heavy use for crabbing in the bay, though anchorage is limited. Chaiel Island (45 acres) has been under federal ownership but has been selected by the State of Alaska for recreational purposes. The trail is in a poor unmaintained condition, and is difficult to follow. It begins at the northeast end of the bay 100 feet west of the old recreational cabin site (ruins and chimney) at an old trail marker, a large diamond. It follows the tideflats along the side slope through spruce and hemlock and heads slightly southeast for approximately 3-1/2 miles to the hot springs, partially on a former logging road, and through muskeg and former clear-cuts, creeks, and some heavy brush. There are a number of springs in a semi-natural state.

The head of Fish Bay is also a large intertidal and estuarine system with excellent habitat for waterfowl, deer, bear, bunnies and King crab, coho salmon, and halibut.

Boundaries:

100 feet on each side of trail to springs; 200 feet around each spring.

K-62



Nakwasina Passage to head of Nakwasina Sound

The Nakwasina Passage and head of Nakwasina Sound area probably receives the most intensive recreational and subsistence hunting and fishing use of any area in the Sitka District due to its productivity and ease of access for Sitka for small "day" boats. There is excellent deer habitat, Dungeness crab, somewhat protected anchorages, some old growth timber (although the area has been logged), and various campsites. The Forest Service has selected the Allan Point area of Halleck Island as the site for a group cabin. There are beautiful mountain vistas and accessible drainages to walk, fish, and hunt. There is a good coho salmon run and large numbers of pink salmon in the stream from an unnamed lake to the north, and good Dolly Varden trout fishing in the lake.

Boundaries:

200 feet landward of Mean High Tide on both sides of Nakwasina Passage from the point to the west where the passage narrows to the southern contiguous beach south of Allen Point; all tidelands and northeast contiguous beaches at head of Nakwasina Sound to 200 feet seaward of Mean Lower Low Tide and 200 feet landward of Mean High Tide.



Sitka Conservation Society

P.O. Box 316

Sitka, Alaska 99835

(907) 747-7509 Phone/Fax
September 14, 1995

Gary Morrison
Chatham Area Supervisor
204 Siginaka Way
Sitka, Alaska 99835

Dear Gary:

On September 12, Jim Thomas, Team Leader for the Northwest Baranof Timber Sale and three other persons from the ID Team gave an informal presentation to some members of the Sitka Conservation Society at a noon meeting.

Several items came up that we want to raise with you.

In the Draft GIS Summary Document, Alternative # 1 is labeled "(the Proposed Action)". We believe this term is highly misleading. A normal reader would interpret this designation as meaning that of the five Alternatives described in the Summary, this alternative was the proposed action of the Forest Service. All persons testifying the evening before at the Subsistence/ANILCA hearing interpreted Alternative #1 as the Forest Service recommended action in regard to Northwest Baranof.

Through questioning, we learned from Mr. Thomas, that, in fact, the Forest Service preferred action is Alternative # 2. We pointed out to him that nowhere in the Summary document does it state that Alternative # 2 is the preferred Alternative. Therefore the normal public reader would assume that "the Proposed Action" is the identifying marker for the desired Action. (On page 2-25 in the larger Volume I there is one sentence that states that Alternative #2 is the "preferred alternative"; that is the only mention that we have found in the hundreds of pages of text.) Since the public normally received only the Summary Document and the five accompanying maps, they would have no way of knowing what or where the hidden designation was.

Jim Thomas did not see this omission as a problem, and in fact dismissed it as "merely a semantic problem" on our part. He did not acknowledge our concern, and instead, proceeded to describe how the Forest Service derived the Proposed Alternative. We learned from him that even Proposed Alternative # 1 in the DEIS is in fact a third generation of an original "Proposed Action". It is unfortunate that the FS does not explain how this term "Proposed Action" is derived. We stated that each modification should be labeled as such to make it clear to the public which version of the "Proposed Action" is being described. Jim Thomas did not consider that a valid suggestion, stating that since we were the only persons who had brought it up, that it is of no problem to anyone else.

Working to conserve the natural environment of the Tongass Forest and to protect Sitka's quality of life.



Sitka Conservation Society

P.O. Box 316
Sitka, Alaska 99835

(907) 747-7509 Phone/Fax

October 16, 1995

COMMENTS ON: NORTHWEST BARANOF TIMBER SALE(S) DRAFT ENVIRONMENTAL IMPACT STATEMENT

[39 pages]

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When we asked him to correct the omission of "the Preferred Alternative", he replied that it was not his responsibility to make corrections, and that we should write you if we had any problem with his statement. We commented that since he felt he was unable to make this correction, that at least he should notify his supervisor, District Ranger Franzel, of our concern. He agreed reluctantly. We indicated that we would write our concern to you, as he suggested.

The Sitka Conservation Society formally requests the Chatham Area Supervisor to make a public announcement that Alternative #2 is the preferred action for the NW Draft EIS, and that Alternative #1 is not the preferred action; we ask that this announcement be published in a news and radio article, and that it be mailed to each person who received a copy of the NW Draft EIS Summary document; we ask further that the date for public comment be amended to reflect a new starting date, as of the date of the public announcement.

In our opinion, the failure of the Forest Service to designate its preferred alternative in the Summary Document of the DEIS violates its responsibility to inform the public of its planned action. In the absence of that designation, the public is directly misled by the use of the term "The Proposed Action", and thus must derive a false message.

I reported our concern verbally to Jim Franzel, Sitka District Ranger, that same afternoon.

The other members of the Forest Service Team who were present were: Ted Allio, Cindy Hartman, and Bob Flynn.

Yours truly,

Lee
Lee Schmidt
Board President

cc: Jim Franzel
Phil Janik

Postscript:

Gary, you beat me to it! You wrote the notification about the omission and extended the comment period before I got this in the mail, so I didn't send it. Subsequently, I have decided that I still need to send it, so that this concern is officially documented in the NW Baranof record.

Lee

PART I — GENERAL COMMENTS & REQUESTED ALTERNATIVE

The Sitka Conservation Society submits these comments on behalf of: our members and of what we believe to be the greatest long term good for the community of Sitka and future generations of Sitkans.

Our members and the community as a whole rely heavily on the forest that is near Sitka, including the Project Area but extending far beyond it. The Project Area is of great importance because of its proximity. This reliance on the Project Area includes all manner of forest uses.

Prime among these uses, because of its high prevalence among Sitka families, because of its position as a foundation of Sitka's culture, and because the opportunity to pursue it is becoming rarer and rarer in the United States — is subsistence. The NW Baranof Project will harm the reliance of Sitka's families, culture and economy on subsistence. The project area is the most important subsistence use area, bar none, for Alaska's largest subsistence community — Sitka.

The NW Baranof Project, as planned, will violate the protections for subsistence afforded by Title VIII of the Alaska National Interest Lands Conservation Act (ANILCA). These violations will become apparent through the detailed comments that follow. In addition to actual ANILCA violations, the impacts of the project on subsistence are unjustifiable for humanitarian reasons and because, given past logging impacts to the Project Area, the thrust of the project is the antithesis of good management.

The impacts on subsistence, among other impacts of any of the action alternatives, are almost entirely concealed or ignored in the Draft Environmental Impact Statement (DEIS). The information presented in the DEIS and the analyses of the effects of the project are remarkable in their shallowness. This will be discussed in detail below. A decision to adopt any action alternative based on the information and analyses in this DEIS will unavoidably be arbitrary and capricious, and downright deleterious to the public's welfare.

Other forest uses besides subsistence will suffer as well, including tourism, recreation, and spiritual attachment.

Many of the impacts of this project will not be apparent for decades, and many will last for centuries. Future generations of Sitkans will have to live with serious consequences of this project in combination with impacts from past logging in the Project Area and past and current logging in a number of other nearby areas. The analyses in the DEIS do not afford adequate consideration to the cumulative and long-term impacts of past and current management of the Project Area and other nearby project areas on living generations and future generations of Sitkans.

It is apparent from Sitka's vote on Proposition 2 (October 3, 1995) that something is very wrong with the thrust of Forest Service management of the forest near Sitka. At least half of Sitkans are very dissatisfied with this management. The scoping process for this project was obviously flawed. Our review of the scoping comments both from 1993 and 1994 revealed deep and widespread discontent over this project. This discontent is supported by the comments of the Forest Service's sister resource agencies. This discontent was not detected by the planning team, but should have been. Also, a large number of significant issues raised during scoping were not identified and addressed by the team.

For all of these reasons, and more, the Sitka Conservation Society asks that one of two decisions recommended here be made for this project. Preferably, the project should be summarily cancelled, now. This action will prevent wasting federal funds on a project that should not have gone beyond initial scoping, and we request that this action be taken. If, however, the plan is completed and an FEIS is issued, we request that the Record of Decision select Alternative 5, the "No Action" alternative.

In either event, the Forest Service may wish to initiate a new project that includes all or part of the project area. This should be a project with a fundamentally different approach to both the type of logging and its scale. The project area has been hit so hard by past logging that it can tolerate little more, in view of its other substantial public uses. The timber industry and the Forest Service have conducted the logging portion of multiple use unsustainably and excessively in this project area. Now it is time for the Forest Service to face this fact and to act accordingly in the best interest of the public and the resource.

PART II — FATAL FLAWS IN THE PLAN & ITS IMPACT ANALYSES

There are a number of fatal flaws in the planning work that has been done and in the analysis of impacts. These will be discussed here one-by-one. Any of these flaws, by itself, is sufficient to necessitate a supplemental DEIS, were project to move on to a record of decision adopting an action alternative. In combination, these flaws indicate fundamental problems with the planning process that would require substantial remedial work to correct.

A. THE DEIS FAILS TO ACCURATELY DESCRIBE THE CURRENT CONDITION OF THE AFFECTED ENVIRONMENT.

(Please see page-by-page comments in Part V. of these comments that concern Chapter 3 of the DEIS.)

B. THE DEIS WILDLIFE/SUBSISTENCE ANALYSES ARE BASELESS.

The Forest Service has failed to consider best available scientific knowledge in planning this project. Understanding of the ecological principles at play in the cause/effect relationship between logging and wildlife (for example deer) is not evident in the analyses and description of the affected environment in the DEIS. Instead, reliance was placed on habitat capability models which are unreliable.

What little data that is presented in the DEIS is based on consideration of all old-growth habitat in aggregate. Using deer as an example, however, volume class is the single most important forest characteristic for determining the value of habitat — the higher the volume per acre, generally the more critical the habitat in winter. (Kirchhoff, public presentation.) There is a large body of scientific information on deer in habitats like ours. Its results are amazingly consistent. Yet, no apparent reliance was made in the DEIS on the large body of scientific studies on deer, even though this best available knowledge.

No analysis of wildlife habitat or impacts was made in the DEIS based on volume class. The DEIS looks only at "old-growth" in aggregate, giving equal consideration to all natural forest habitat regardless of its quality.

While there is a table showing volume class distribution in the "Commercial Forest Land" section of the "Affected Environment" chapter (Table 3-12 on page 3-35), the volume

DEIS places on habitat capability models.

From Peer Review (p.5): "... none (of the Habitat Capability Models) has any calculation of the probable error associated with them. The modeling approach needs to be rethought and a program of work to develop them into models that have Tongass-specific data and confidence limits needs to be developed."

Other citations from the "peer review" of March 1994:

(p.14) Habitat Capability Models in General. "We have a good deal of reservation about the HCMs. The greatest concern is about the false precision that the models imply. They may be precise, but the accuracy is unknown and we assume it to be very low. The models are deterministic and do not take into account any stochastic features of the relationship between habitat and population and they are parameterized with data whose error limits are unknown and very likely high. Thus the confidence limits for the models, were they to be calculated in some way, would surely be so large as to render the models close to useless. Also, as the authors of 'Models' point out, the models may be quite sensitive to small changes in parameter values in ways that are not understood."

"These models have played a useful role in organizing current knowledge and emphasizing knowledge gaps, but it is now time to build on this beginning and move to more realistic approaches whose confidence limits can be calculated."

(p.22): specific to the Sitka Black-tailed deer model. "... The sampling and analysis techniques used to verify the model are problematic in that there is not enough methodological information available on which to evaluate the analyses. ... An additional concern addresses the issue of using a mean value for snowfall throughout the (Tongass) when there is considerable variation from northern to southern regions of the forest. The model needs to incorporate these issues in order to provide a realistic assessment of the habitat. The HCA model for maintaining viable populations of Sitka black-tailed deer on the Tongass National Forest is probably not suited for the long term. McCullough expresses concerns that problems of oscillating factors may create extremes in population that would make the deer especially vulnerable to the pressures of hunting and wolf predation. This combination of factors could place the viability of the species in question."

Response of the Interagency Viable Wildlife Populations Committee (May 1994):

"The habitat capability models have a role to play in making relative comparisons of the likely effects of different management alternatives on wildlife. They are relatively simple, deterministic models. We do not support using them for analysis of viability. We fully concur with the recommendation that spatially explicit (Population Viability Assessments) are superior for evaluating viability concerns." (p.8)

C. ALL ECONOMIC ANALYSES IN THE DEIS WERE STRONGLY BIASED IN FAVOR OF THE TIMBER EXTRACTION PROPOSED BY THE ACTION ALTERNATIVES, WHILE IGNORING IMPACTS OF TIMBER EXTRACTION ON OTHER ELEMENTS OF THE ECONOMY.

(Please see comments on this throughout the page-by-page comments in Part V, below.)

class columns in this table are aggregations of both old growth forest and all second growth stands that exceed 8000 board feet per acre. The stand structures of second growth and old growth are so different from a habitat point of view that this table would be of no value in a wildlife effects analysis. The planning team was unable to provide us with a breakdown of this table showing only old-growth — obviously this view of habitat was considered unimportant.

Analysis in the DEIS of project impact on wildlife, and therefore on subsistence, rests almost entirely on "Habitat Capability Models" (HCMs). The DEIS strongly states that its reliance on HCMs is conservative (see page 4-21): "Because we lack information on effects of alternative silvicultural systems on wildlife, we give harvested areas the same habitat capability value, regardless of the silvicultural treatment proposed (i.e. the effects of clearcut harvest and group selection are considered to be equal in the habitat capability models). The wildlife habitat capability models were designed to reflect only the effects of clearcutting. As a result, the effects indicated by the models are more severe than we would actually expect."

While strongly stating that use of the HCMs is conservative, the DEIS makes only brief qualification concerning their accuracy: "As a result, the habitat capability (models) should only be used as a basis for comparing alternatives." Incredibly however, the DEIS does the exact opposite of this, and bases its wildlife and subsistence impacts analyses almost entirely on results of the modelling. At the same time, the DEIS fails to reveal a number of serious and well known flaws with the strategy of such heavy reliance on modelling.

Simply put, the DEIS has completely avoided meaningful analysis of the large and consistent body of best available science concerning impacts of logging on deer (as one example here for wildlife). At the same time, it relies on an easy method of analyses — habitat capability models — that has been well identified in the scientific literature to be unreliable, and it fails to fairly reveal the serious shortcomings of this approach. In fact, it does the opposite, falsely claiming with no substantial support that for this project the use of such models is conservative.

Information supporting our claim:

In the Wildlife Society lawsuit over the Kelp Bay Project, the use of timber type maps for determining "proportionality" was determined by the court to be arbitrary and capricious. This is because the timber type maps are remarkable in their high level of inaccuracy as to where habitats of various qualities are located. The habitat capability models are based on these same maps, and basing impact analysis on these models is therefore arbitrary and capricious as well. This is a major point, considering the tremendous social and economic value of subsistence resources in the project area to the people of Sitka.

In addition, the habitat capability models are very crude. They do not take into account what is sometimes referred to as the juxtaposition of habitats. All acres of a given volume class are considered to have the same value to wildlife, while in fact those isolated or fragmented by logging or muskeg have may have little or no wildlife value in comparison to stands with a more favorable juxtaposition to other habitat types. Fish and Game has found in Peril Strait, for example, that deer winter mortality is two times higher in fragmented than unfragmented habitat.

The "peer review" to the Viable Populations Committee Report, and the committee's response to the peer review are revealing of the problems with the degree of reliance the

D. CUMULATIVE IMPACTS OF THIS PROJECT ARE NOT ADEQUATELY EXPLORED, ANALYZED AND REVEALED IN THE DEIS.

There was no meaningful analysis of cumulative impacts in this DEIS. The time horizons both in the past and future were too short, and the DEIS does not look beyond the boundaries of the Project Area. We believe this project makes a contribution to substantial cumulative impacts of the Forest Service timber program. We believe the Forest Service is afraid to make these impacts known publicly. No timber project EIS in the Chatham Area has yet done an adequate cumulative impacts analysis. By refusing to do adequate cumulative impact analysis, the Forest Service puts its timber program at risk.

Please see the many detailed comments concerning cumulative impacts elsewhere in this document.

E. THE PREFERRED ALTERNATIVE IS CONCEALED RATHER THAN REVEALED.

(Please see comments concerning this in the discussion of Chapter 2, in Part II-G., below.)

F. THE PROJECT "PURPOSE AND NEED," "DESIRED CONDITION," IDENTIFICATION OF ISSUES, AND BASIS FOR SELECTION OF THE PROJECT AREA — THE FOUNDATIONS OF THE PROJECT — ARE ALL DEFICIENT (A Critique of Chapter 1).

The Purpose and Need stated for the NW Baranof Project (DEIS p.1-2) is wholly inappropriate. It is biased in its interpretation of the Tongass Timber Reform Act, ignorant of case law concerning commitment of timber resources in the Chatham Area to logging, and one-sided in its commitment to large-scale logging.

Significantly, the case law referenced was cited in another recent Forest Service planning document: "The current Forest Plan does not require timber harvest or other projects to be implemented anywhere on the Tongass National Forest; the land allocations authorizing timber harvest in various areas of the Forest are permissive, not mandatory. (Trenacke Springs et al. v. Block et al.)" (SEE: A Draft Environmental Assessment for Adopting Interim Habitat Management Guidelines for Maintaining Well-Distributed Viable Wildlife Populations within the Tongass National Forest, p.2, September 1994.) The Forest Service is not constrained to offer the timber proposed in this project, despite its claims to the contrary in this chapter.

The third paragraph of the Purpose and Need section of the DEIS does briefly cite the broader requirement of Section 101 of the Tongass Timber Reform Act providing for the multiple use and sustained yield of all renewable resources. However, the thrust of this paragraph is toward meeting market demand for timber, and the remaining eight paragraphs of the Purpose and Need section focus exclusively on identifying and satisfying this demand for timber. Although briefly mentioned, the broader requirements of TTRA Section 101 are not discussed at all.

Plainly, even at the most basic planning level, the intent — or Purpose and Need — of this project is to provide a large amount of timber regardless of the consequences. The resources and resource uses protected by TTRA Section 101 were not even a factor in shaping this project and its alternatives, and as a result these protected resources and uses have become obstacles for the project of overcome to achieve its purpose.

The outcome is a planning process and DEIS which: have failed to fairly identify' and address significant issues raised by the public and other agencies; which fails to consider alternative basic approaches to managing the project area, focusing instead on a narrow (though not as narrow as usual) range of alternatives that are all of the same kind; and which fails to thoroughly investigate or analyze many likely significant impacts of the project, especially cumulative impacts.

HOW THE PROJECT AREA WAS SELECTED (P.1-9)

According to the DEIS, the Forest Supervisor selected this project area simply because it "contains a sufficient amount of harvestable timber volume on lands designated LUD III or IV, and therefore harvest is appropriate under the TLMP (1979, as amended). Selecting the project area predisposes it to substantial timber harvest — the Forest Service has yet to select or seriously consider a no-action alternative for a timber plan anywhere on the Tongass. The decision to select the NW Baranof Project Area did not consider the high value of the project area for subsistence, and therefore violates TTRA Section 101 and ANILCA Section 810, given the predisposition not to waste planning time and expended funds necessary to produce the DEIS.

It is also revealed on page 1-9 that 18 potential project areas, including the NW Baranof Project Area, were determined without any public involvement or NEPA clearance. The potential project areas then may become project areas, also without prior public involvement or NEPA clearance. Once a project area is identified and assigned a timber target, the most significant decision about the project has already been made — without NEPA review — and all that remains to be done under NEPA is make a relatively minor selection between alternatives of similar kind and timber output. This makes a mockery of the NEPA process.

The decision making that has gone into this project to date violates NEPA, and will result in further decisions that violate NEPA. The project should be summarily terminated, and a new planning process should be commenced that fully complies with NEPA.

LIMITED SCOPE OF THE PROJECT VIOLATES LAW.

The DEIS states (p.1-10), "... the scope of this EIS is limited to project specific issues, actions, alternatives, and impacts. We will not attempt to address or analyze decisions or issues with higher level planning and direction such as the TLMP or the Alaska Regional Guide." This unavoidably will result in violation of law, however. Higher level planning is not yet complete regarding assuring that populations of all wildlife species remain viable and well distributed. This assurance is nonetheless required by NFMA, and at this time viability and distribution must therefore be addressed at the project level by doing thorough site-specific reconnaissance and applying best available science.

THE "DESIRED CONDITION" IS DIVORCED FROM REALITY.

It is stated on page 1-10 that the existing condition of the project area is described in Chapter 3. Chapter 3, however, is notable in its failure to fairly and adequately describe the existing condition (this is discussed in detail elsewhere in these comments). The foundation for predicting the future condition of the project area, even for the no-action alternative, then is missing.

As a result, the ability of this DEIS to realistically suggest a desired future condition (that will be achieved through one of its action alternatives) simply does not exist.

Nonetheless, the DEIS does present its desired future condition for the project area, and does so with over three pages of considerable detail. Since there is no basis in reality for the

proposed desired future condition, it is not surprising that the one presented is vague to the point of uselessness, and hopelessly cornucopian. Its basic claim is that the project area can support all resource demands that may be placed upon it, and that everyone will live happily ever after. It is gratuitous, wishful thinking, and nothing more, even though it claims that here. "... we describe how the project area and the affected environment will look in approximately 50 years."

Significantly, there is no comparison among the five alternatives of how well the agency predicts each will satisfy the desired future condition, and why.

This section should have stuck with describing the desired physical condition of the forest only — without using meaningless descriptions about mosaics, and focusing instead on the important characteristics of habitat, visuals, etc. that are central to the real issues.

Detailed comments on the desired future condition section are provided in the "age-by-page" section of our comments.

G. THE DEIS PLACES HEAVY IMPORTANCE ON CHAPTER 2 ("Alternatives Including the Proposed Action") FOR THE DECISION MAKER, YET THIS CHAPTER IS INSUFFICIENT FOR SUCH RELIANCE.

The Draft EIS characterizes its Chapter 2 (Alternatives including the Proposed Action) as the heart of the EIS (p. 2-1): "This chapter contains the key elements needed by the decision maker. It describes the alternatives and compares them based on the information and analysis in Chapters 3 and 4. These later chapters contain the detailed scientific basis for establishing a baseline and measuring the environmental consequences for each of the alternatives."

In other words, the decision maker may well NOT look beyond Chapter 2 to the following chapters and appendices, since Chapter 2 contains the key elements needed for the decision. As will become apparent from the following comments, Chapter 2 is an inadequate basis for decision making.

One significant problem with Chapter 2 is its failure to include cumulative impacts (to the extent they have been evaluated elsewhere in the DEIS) in the "Comparison of Alternatives by Issue" section. Even if cumulative impacts had been presented here, there would still be the fatal flaw that consideration of cumulative impacts in the DEIS is grossly incomplete.

After its introductory paragraph, Chapter 2 launches into a discussion of Ecosystem Management. What this section has to do with alternatives is never explained, but apparently its purpose is to establish an underlying philosophy that is common to the four action alternatives that were considered.

The definition provided for Ecosystem Management (page 2-1, 3rd paragraph) is very troubling, however. "Ecosystem management is a concept of natural resource management wherein management activities are considered within the context of economic, ecological, and social interactions within a defined area or region over both the short and long term." Further elucidation of Ecosystem Management states (ibid, last sentence on page): "We manage (ecosystems) for specific purposes, such as ... sustaining certain ecological conditions; for desired resource uses and products; and ..."

This definition lists "economic interactions" BEFORE ecological ones, indicating a greater importance for the former in the view of the Forest Service. It also includes "social" interactions as a consideration. Ecosystem Management is also defined in the Glossary of the DEIS. Here, the definition differs, listing biological needs fourth behind social, physical and economic needs. In other words, Ecosystem Management does not represent a new way of managing the forest, as the public has been told formerly by the Forest Service, but is instead simply a new term for doing forest planning pretty much the same old way.

In stark contrast to these two definitions of Ecosystem Management, to the public the term strongly implies a dramatically new resource management methodology that emphasizes maintaining ecosystem character, health and function while obtaining social and commercial benefits from the ecosystem. The ecosystem would come first under this definition, and the social and commercial benefits derived from the forest would be (in cumulative type and scale of disturbance) compatible with this overarching constraint.

The second citation above states that only "certain ecological conditions" will be maintained. It is never explained in the DEIS what these "certain ecological conditions" are, nor are the four action alternatives evaluated on how well they will maintain these conditions. More importantly, the range of alternatives (although broader than in most other project plans on the Tongass) were broad enough to fully reflect the full breadth of public opinion on what ecological conditions should be maintained on the project area.

The list of ecological conditions the Forest Service professes to protect in this project, and the implied list of the other conditions it does not intend to protect, is revealing (see page 2-2):

Protected	Unprotected
Wildlife population viability.	Huntable wildlife populations.
Beach and estuary fringes maintained.	Sustained yield of all renewable resources.
	Old growth habitat character.

The list provided on page 2-2 of the DEIS is unacceptable because of its omissions. The two listed items, together with two planning items constitute what was called a "framework." The DEIS states (see page 2-2): "This framework helped us to limit the range of alternatives we developed to only those that would sustain the diversity and productivity of the ecosystems we are managing." No proof is offered in the DEIS, however, that ecosystem diversity and productivity will indeed be maintained by any of the action alternatives considered.

While efforts to maintain viable populations may maintain diversity, this and protection of beach and estuary fringes are not sufficient to maintain ecosystem productivity or to assure a sustained yield of all renewable resources (which was not even mentioned).

The DEIS discusses in many words each of the four parts to the project's ecosystem management "framework." Comments will be given on each in turn here:

(1) Application of Appropriate Silvicultural Treatments (see p.2-2).

The DEIS states, "... we attempted, where possible, to design management activities which 'mimic' natural disturbance patterns." Nowhere in the EIS are these management activities described in detail, nor is there an analysis of their assumed efficacy or past per-

formance in avoiding impacts.

It is especially important that there be a cumulative impacts analysis that considers the scale on which the Forest Service has applied and proposes to apply (both in this project and others in nearby project areas) unnatural disturbances that purport to mimic nature. While individual disturbances may themselves appear to mimic nature, in aggregate all such disturbances may well create an overall disturbance that overwhelms nature.

In other words, although the title of the DEIS subsection uses the term "appropriate" silvicultural treatments, the plan and the DEIS make no reliable proof that the treatments are in fact "appropriate." Unless a rigorous cumulative effects analysis is conducted, silvicultural methods that may seem "appropriate" can easily have disastrous consequences.

Four logging methods are described, beginning on page 2-2. Retention of snag trees needs to be clearly described for what it is — a short term benefit. Once a unit is cut and committed to rotational harvest, the future supply of snags is limited to those which exist now, and they will stand only for a limited time. While leaving snags has some short term benefit (for the time the snags remain standing), this practice does not mimic nature. To mimic nature, a constant supply of snags of all sizes must be maintained.

After logging, the snags left behind will be more susceptible to blow-down, but will have a limited life in any event (as all snags do, by their nature). The problem comes after the existing snags are lost. The supply of snags will not be replenished in quantities that mimic nature, if at all. This is especially true for large snags. Growing large snags is a process that takes centuries, and large snags are ecologically important.

It is stated on page 2-4, "Overstory removal maintains a larger number of trees than the seed tree cut (20-60% of the existing stand)." This is erroneous — Appendix C reveals that in two units (4095 and 6293) only 10 percent of the stand will remain — this is 90% removal.

Looking at Figure 2-1 (on page 2-3), even when only 20 percent of the overstory is removed, the end result is unacceptable, especially in view of previous logging impacts to the project area. Even removing as little as 20% of the overstory radically changes the structure of the stand.

Overstory removal is just another form of "highgrading," in selectively stripping away primarily the highest dollar value timber in the stand, it strips away one of the key elements of the ecological structure of the old growth forest — the parts of the canopy that break the snow the best. While overstory removal may be easier on the eyes than clearcutting, its ecological effects will be insidious if practiced widely.

It is also stated on page 2-4, "Important old-growth attributes (significant large tree component, snags, and large down woody material) can be retained." The questions though are will they be retained, to what degree, and where? Even though Chapter 2 is alleged by the DEIS to contain "the key elements needed by the decision maker" (page 2-1), Chapter 2 provides no indication of how much of the various forest components will be retained in either individual units or various parts of the project area. In fact this information is nowhere to be found in the EIS, not even as objectives on the unit cards. Silvicultural implications of overstory removal is discussed, but discussion of wildlife implications is conspicuous in its absence.

Group selection, as described on page 2-4, amounts to the long term commitment of the entire stand to cutting. Eventually the old-growth character of the stand will be completely lost. This is still an objectionable logging method in a project of this scale in a project area that is already heavily impacted. It is stated (page 2-5) that "group selection mimics wind disturbance patterns occurring across much of the Northwest Baranof Project Area." This is true only in terms of appearances, since in blowdown the tree bodies remain on-site. It is also true only to the extent that the unnatural disturbances do not add markedly to the amount of natural disturbance. The amount of unnatural disturbance in the project area is already so high that even cuts which are professed to mimic nature will cause disproportionately higher impacts.

It is also stated of Overstory Removal (page 2-5) that "as group selection is implemented over time, a diverse, multilayered canopy is produced." This canopy will not mimic old growth, however, and the EIS should have made this clear. Use of the word "diverse" is highly misleading, since the far greater diversity of old growth habitat will be lost in the process, and will not be recreated.

(2) Deferred Harvest for Viable Populations:

Consideration of northern goshawk habitat requirements (page 2-5) is too generalized. It is known that home ranges can be quite large. This fact combined with the great sparseness and lower than average quality of forest habitat on Baranof and southern Chichagof Islands, in comparison to the rest of the Tongass, indicates that additional study of goshawks using the project area should have been conducted during activities leading to publication of the DEIS. An assessment of how stressed the existing population may be is needed, in view of the impacts of past logging in the project area.

(3) Beach & Estuary Fringes. No comment.

4) Interdisciplinary Analysis.

It is surprising that this has been mentioned, since interdisciplinary teams have been used in the Chatham Area for many years. What is of concern is how much professional freedom individual specialists are given, how much pressure they are under to "get the cut out," and how (over the long term) pressures within the agency may have helped determine the attitudes represented on the team.

It is stated (p. 2-7) "... we must sustain the diversity and productivity of the ecosystems we manage." Diversity and productivity can have many meanings, but are not defined. The sentence is so vague that it is meaningless. We believe the ideal stated will not be achieved with this project, and the planning team is oblivious to this because it has done a biased analysis that lacks substantive cumulative impacts analysis.

Alternative Development.

It is refreshing to see a broader than usual range of alternatives in a Forest Service project DEIS, but the Forest Service still has not considered all alternatives that it needs to. The low end of the alternative range, 35 mmbl, is arbitrary; this is still a very large project. And alternatives portraying a very small project were not provided. The action alternatives all represent basically the same paradigm. Even though scoping comments indicated the exceptionally strong public's desire for other paradigms to be considered in detail, these

were not included in the alternatives studied in detail. Suspiciously, none of these alternative paradigms were even mentioned in the section 'Alternatives Eliminated from Detailed Study.'

After Proposition 2 on the October 3, 1995 Sitka ballot failed essentially split the vote evenly, it is absolutely clear that Forest Service planning within the City and Borough of Sitka must consider in detail alternatives that represent new paradigms for the timber industry. The people of Sitka came within 4 votes of establishing municipal policy to oppose clearcutting in a large area of the borough, including the NW Baranof Project area.

Alternatives Considered in Detail — Alternative 1:

The DEIS states (page 2-10) "Wildlife habitat and subsistence resources are maintained along the north shores of Nakwasiina Passage, St. John Baptist Bay, and throughout the Fish Bay drainage." Significantly, all of these areas are already impaired by past logging activities. This must be mentioned. Impacts of the planned action would be additional ones. The questions are where and how will the quality of forest resources be cumulatively diminished?

It is also stated that "opportunity for increased ... (road) access would be provided on the road system south of St. John Baptist Bay." The amount of road access currently available in the project area and other areas used by Sitkans has not been revealed in the DEIS. Nor has the amount of existing logging roads that could be cleared for further access been analyzed. It has not been established in the DEIS whether a real need exists for increased access in the project area, and if so, whether this project is the best way to provide it. Therefore, given the current state of knowledge as presented in the DEIS, it is not legitimate to claim increased access as a significant benefit of the project.

Alternative 2.

"This alternative maintains the existing conditions in MUCH of the Northwest Baranof Project Area by deferring timber harvest in MANY of the areas which seem to have seen only limited harvest in the past." The terms "much" and "many" need to be quantified — much of the project area is non-forest; therefore this sentence says nothing about how the alternative would affect the forested parts of project area generally, and the higher quality component of the forested parts in particular.

Alternative 3.

Relative benefits are claimed by the DEIS (p. 2-11) for this alternative, but no minuses are presented. Logging in close proximity to the State Park at Baby Bear Bay is not mentioned. Nor is the filling in of gaps between existing clearcuts in the Rodman Bay and Duffield areas mentioned. This fill in will result in a wall of close to 20 continuous miles of logged habitat, interrupted by barely a handful of narrow wildlife corridors. The description of this alternative is absolutely biased — both for the decision maker and the public.

Alternative 4.

Again, a number of benefits are claimed, and no minuses are presented. The claim of creating "a mosaic of diverse forest age structures" (p. 2-11) is a negative effect of the plan that will masquerade as a benefit for many readers.

ADDITIONAL COMMENTS ON CHAPTER 2.

For discussions of the remaining sections of Chapter 2, please see our page-by-page comments in Section V.

II. INFORMATION COMPILED DURING PUBLIC SCOPING WAS NOT FAIRLY EVALUATED, AND SIGNIFICANT ISSUES RAISED BY THE PUBLIC AND RESOURCE AGENCIES WERE NOT ADDRESSED.

The scoping process for this project was deeply flawed. Information collected during scoping was not fairly and thoroughly analyzed.

Following is our non-exhaustive exhuming of issues raised by or on behalf of the public. Some issues are resource specific, others are procedural for the planning and NEPA processes. All are legitimate and should have been explicitly identified and addressed in the DEIS. Although this list is quite long, it was easy to compile; however, some issues have been missed. There is a small amount of duplication between some of the cited comments — we felt differing and important shades were put on the issues by different people.

Even among the few issues that were identified in the DEIS, many were not substantively addressed, and there was no quality control or follow-up in the DEIS to assure that resolution was achieved for each issue.

The strong showing for no clearcutting in the Project Area (Proposition 2) should come as no surprise given many of the following scoping comments.

Examples of significant issues the Forest Service failed to identify from scoping and properly address in the DEIS (a long, but non-exhaustive list): (emphasis added.)

1. Increasing value of timber in its natural state, raised by Roger Sam (see page 7 of 38 in 1993 scoping comments). Including benefit of this for fisheries and tourism.
2. "This project area has a higher value for fish and wildlife than for logging." Larry A. Beebe, Datalib 31158, scoping comments 8/93.
3. "Critical (deer) winter range must be identified and protected." Dave Gordon, page 9 of 38, 1993 scoping comments.
4. "Specifically, I am concerned about: 1. Proposed logging activity on 'No-Fall Ridge' in Nakwasiina area (VCU 300) ..." Rebecca Himschoot, page 12 of 38, 1993 scoping comments.
5. "... 5. Availability of intact drainages for wildlife. A glance at the proposed harvest indicates no drainage which is left untouched." (Himschoot)
6. "I wish us the generosity to let this survivor of free land remain and not also hack a bleeding road through it — to gut it and create more work and export — and make one more slave of it." 8/13/93 letter to the editor by Theo Grutter, placed in the scoping record.
7. "... clearcut logging is incompatible with the fishing, tourism, and recreational industries." The Gonzales Family, 8/29/93 scoping comments.

8. KJ Metcalf, 8/30/93: "(6) A look at this project in a cumulative perspective. This must include past logging, current projects (Kelp, SE Chich, and Ushk) and future logging, to well into the next century. This has not been done, and is a significant issue."

This identifies the nature of how cumulative impacts are analyzed as a significant issue. This issue was not addressed — cumulatives were analyzed in the same shoddy manner as always, with no consideration for this issue which was explicitly raised here.

9. "... maintenance of a 1,000 foot uncut timber buffer along Nakwasina Passage, St. John Bay and the north side of Fish Bay. This is an inadequate ruse and designed to mislead the subsistence and sport hunters of this community. ... The 1,000 foot buffer of uncut timber must be extended to include both sides of Nakwasina Sound and Nakwasina Bay to encompass the critical deer winter range that still remains ..." Ben Mitchell, page 23 of 38 of 1993 scoping comments.

10. "Members of the Sitka Fish & Game Advisory Committee feel logging the timber would not be worth the trade off at this time if jobs are not being maintained in Sitka as a result of the timber industry." Sue Sturm, 1993 coping comments for the Sitka Fish and Game Advisory Committee.

Note that on October 11, 1995 the Advisory Committee voted unanimously for Alternative 5 (the No Action alternative) in the DEIS.

11. "If there is logging around fish streams, the members felt that there should be a minimum of 500 feet buffer strips on either side." Sitka Fish and Game Advisory Committee, 1993 scoping comments.

12. "The committee would rather see the ferry route logged before the high value habitat valleys are logged." Fish and Game Advisory Committee, 1993 scoping comments.

13. "Please, with the closure of the Sitka mill, give some consideration to forest management besides 'conversion of old-growth timber to managed productive stands.'" Jimmie C. Rosenbruch, 1993 scoping comments.

14. "... the Forest Service spends far more on surveying proposed timber sales and putting in logging roads than it receives for the harvested lumber. This is an obscene waste of tax dollars." The Gonzales Family, 1994 scoping comments.

15. He was not in favor of any timber harvest at all within the project area. (Planning team notes on 9/9/94 scoping phone call from Jeff Kinnan.)

16. "No unroaded watersheds should be roaded." Judy Brakel, 9/14/94 scoping comments.

17. "Please do not use the word 'harvest' on the maps and in the planning documents for this project. It is propaganda. Old-growth is not a crop." Larry Edwards, scoping comments 9/21/94.

18. "For the NW Baranof proposed sales, I support the following: — small sales for small, local independent operators (less than 500,000 mbf)." Don Muller, 9/21/94 scoping comments. (Note: bf rather than mbf was probably intended.)

19. "Maintain old-growth (all classes) at present levels — a No-Net-Loss old-growth policy." Don Muller, *ibid*.

20. "No clearcutting." Don Muller, *ibid*.

21. "... these steps (above) are necessary until we have a better understanding of the forest ..." Don Muller, *ibid*.

22. 10/4/94 comments of John C. Vallie call into question differing definitions of "sustained" as an issue. "I blame the Forest Service for not being the science-oriented, sustained yield advocates they lead us to believe they were."

23. "Not. This sale and all future sales of this kind is unacceptable until there is local manufacturing plant(s) to process the major portion of what is scientifically appropriate to cut." John Vallie, *ibid*.

24. "Would like to see St. John peninsula dropped — harvest on existing road." Eric Jordan, 1994 scoping comments.

25. "Don't harvest in Nakwasina — too much value for local deer hunters ..." Eric Jordan, *ibid*.

26. "For these and other reasons, SCS urges that this Sale be postponed indefinitely ... SCS believes that very small timber sales should be prepared to encourage and facilitate small local business uses." Sitka Conservation Society scoping comments, 10/19/94.

27. "... this planning should be stopped until the several major pending changes in the rules or guidelines for management of the Forest have been implemented. To proceed with planning now is a waste of government money and public credibility." Robert J. Ellis, 10/20/94 scoping comments.

28. "... The need for continued timber sales under the guise of aiding Sitka's economy is doubtful at best." Robert J. Ellis, *ibid*.

29. "The effects of shifting forest uses (hunting, subsistence, recreation, etc.) from logged areas to nearby Wilderness and Marine Parks could be significant and are not adequately addressed." Robert J. Ellis, *ibid*.

30. Public opinion expressed in Sitka's Comprehensive Plan revision must be considered. Several examples from the draft plan were given. One example quoted from the plan: "Goal: Outside the Sitka area, form the North end of Hoonah Sound, Perl Stratis west of Peschani Point south to Whale Bay the primary use of the ocean and forest habitat within one mile of salt water beaches is to be the production of plants and animals for subsistence." Robert J. Ellis, *ibid*. (Note: many units in the action alternatives, including the preferred alternative, are within one mile of salt water.

31. "The Forest Service should recognize the community's needs and desires with relative to subsistence as expressed in the (draft) Comprehensive Plan." Ellis, *ibid*.

32. "... it is very disappointing that this sale is even being considered." Loyal Johnson.

10/20/94 scoping comments. (Supporting information concerning importance of the project area for subsistence and sport hunting, and concerning likely long-term cumulative impacts, is presented by this former Sitka area ADF&G game biologist.)

33. "A major concern relates to the potential adverse impacts to subsistence deer hunting in the project area. A large segment of the Sitka subsistence hunters (as well as sport hunters) hunt in portions of the project area, especially when fall/winter weather limits safe small boat access to the open waters south of Sitka. The Fish and Game comment letters have documented this issue in depth." City and Borough of Sitka, 10/21/94 scoping comments.

34. "A second major concern is the adverse impacts to recreational and other users of certain heavily used portions of the project area (especially within Nakwasina Sound and Passage)." City and Borough of Sitka, *ibid*.

35. "It is hoped that because of the considerable importance of the Nakwasina area for Sitka hunters and recreational users, and the valuable and productive deer habitat of this area, that this area could be left uncut ..." City and Borough of Sitka, *ibid*.

36. "We feel ... that in view of several factors the project should be terminated." Sitkan Larry Edwards for Greenpeace, 10/21/94 scoping comments. (Note: Issues cited include the project area's proximity to Sitka, importance of the area to Sitka's subsistence and recreation uses, Sitka's status as the state's largest subsistence community and sixth largest city, and paucity of good forest habitat in a large area which includes the project area.)

37. The form and content of the project's purpose and need was identified as a significant issue. Larry Edwards, *ibid*.

38. "New issue:" a smaller timber project may be more appropriate than a multi-million board foot one. Larry Edwards, *ibid*.

39. "New issue:" analysis of cumulative impacts needs to be greatly expanded beyond what has been done in other forest service projects. Edwards, *ibid*.

40. "New issue:" sound management requires the application of well developed precautionary principles. No calculations or estimates should be taken at their face value.

41. "Please eliminate all propaganda, including the use of such words as 'harvest,' 'from further documents prepared by your team. ... Please carefully consider all words and phrases that are used in your documents, and please consult your publics about any questionable lexicon or phrases." Larry Edwards, *ibid*.

42. "The Service recommends that large, medium, and small Habitat Conservation Areas and wildlife travel corridors ... be included in all of the project alternatives." US Fish and Wildlife Service, 10/21/94 scoping comments.

43. "Plans for the Northwest Baranof Timber Sale should remain flexible to accommodate DEVELOPING ecosystem management efforts, such as: (1) the TLMF revisions to maintain viable wildlife populations, (2) ... (3) additional fisheries habitat protection, and (4) ..." USF&WS, *ibid*.

44. "The proposed harvest would result in loss of these forest habitats, and may have

SIGNIFICANT impacts on this species (the Marbled murrelet) and its future existence in the Northwest Baranof area. While we agree that more information is needed concerning the specific life history and population status of these birds in Alaska, there are sufficient indicators from elsewhere in their range (Washington, Oregon, California) that suggest a cause and effect relationship between loss of mature forest and reduced murrelet populations. Thus we believe a cautious management approach is warranted. Although a single action such as the current proposal may not adversely affect the marbled murrelet population, the cumulative impacts of region-wide cutting may have significant deleterious impacts. Thus, the cumulative impacts of this proposal should be evaluated thoroughly. Preliminary marbled murrelet pre-breeding flight counts and intensive inventory surveys during the breeding season ... should be conducted at the site, and results included in the ... DEIS." USF&WS, *ibid*.

Note: This raises two related but distinct significant issues —direct effects on the marbled murrelet, and cumulative impacts on it.

Note: The USF&WS offered its help in conducting marbled murrelet surveys (see last paragraph of its comments).

45. "The Northwest Baranof area has been significantly fragmented by past timber harvest activities. A thorough fragmentation analysis should be presented in the DEIS. Patch size and spatial relationships should be carefully evaluated to determine the effects on key species and species movement." USF&WS, *ibid*.

46. "Selective cutting is recommended as a viable alternative to clear cutting to maintain a multi-canopy structure and diversity of wildlife habitat." USF&WS, *ibid*.

47. "Cumulative effects analysis should evaluate the proposed timber sale in combination with the effects of past and future sales in the project area and surrounding VCUs. The cumulative effects to fish, wildlife, recreational and subsistence values should be examined." USF&WS, *ibid*.

48. "I strongly urge the N. Baranof planning team to abort the (timber) sale" Laura Schmidt, undated 1994 scoping comments.

49. Units 8011 through 8065, 9011 through 9061, and 7021 through 7084 should be removed from this cut plan. Cutting these units would be more of a bad thing in an area that is already heavily clearcut. William Stortz, undated 1994 scoping comments.

50. "You should be aware that Nakwasina Sound is a candidate for the EPA (303d) list of impaired waterways." Ben Mitchell, 10/27/94 scoping comments.

51. "... we wish to emphasize that the models are only one source of information and cannot be used as sole justification for management decisions." State of Alaska DGC, 10/28/94 scoping comments, p.5.

52. "DFG stated that although the USFS is not compelled to adopt the Viable Populations Committee recommendations for the Northwest Baranof Sale, [the USFS] does need to show how the sale plan fits some scientifically credible plan to maintain well distributed viable populations." *ibid*, p.5, citing p.17 of comments submitted April 6.

53. "Report thresholds of concern for the level of timber harvest in watersheds. If the

threshold is approached in one or more watersheds ... then a cumulative watershed effects analysis ... should be considered and discussed." ADEC, 9/15/94 scoping comments.

54. "The two (proposed) HCAs are not displayed in either the August 26 scoping document or the formal 'notice of intent.' We suspect that the bulk of scoping respondents will not understand or address the range of issues associated with the revised sale since the 8/26/94 sale document is less than clear in describing the revised scope, proposed HCAs or unit and road pool." ADF&G, 10/19/94 comments, p.1.

55. "The shift in the NW Baranof project to "... smaller independent sales tend(s) to focus harvest in high value habitats easily accessible from salt water (for economic reasons), many of which are heavily used by Sitka residents for subsistence harvest." ADF&G, *ibid.*, p.2.

56. "We note that three areas where harvest is proposed, namely south of Nakwasina River, Noxon Creek valley, and the peninsula south of St. John Baptist Bay, are all areas the department has asked to be protected in Habitat Conservation Areas, or wildlife habitat retention because of their importance to Sitka deer hunters. The concentration of harvest in the Nakwasina and St. John Baptist area will cause additional losses of deer habitat in one of the most important Sitka hunt areas." ADF&G, *ibid.*

57. "The information content of Unit and Road Cards is a significant issue. ADF&G, *ibid.*, p.3.

58. "Information needs were identified as a significant issue, in several areas. ADF&G, *ibid.*, p.5.

59. "We recommend that deer habitat analysis evaluate habitat productivity of discrete blocks of alpine/low elevation deer habitat. The project area appears to be naturally divided into three analysis areas based on geomorphology in combination with extensive second growth in the larger valleys." Specific analysis needs were identified. ADF&G, *ibid.*, p.5.

60. "Our past concerns about FS interpretation of deer habitat capability model results are incorporated here by reference." ADF&G, *ibid.*, p.5.

61. Based on citations to the Tongass Timber Reform Act, "the Forest Service must wait until the EIS process is completed and all environmental consequences are fully considered before deciding how much timber can be logged from a project area. Accordingly, the Forest Service cannot limit the range of alternatives that it will consider for implementing the proposed Northwest Baranof sale ... to those that would satisfy the target timber volume established in the "purpose and need" section of the Notice of Intent." SEACC, 10/31/94 scoping comments, p.2.

62. "The DEIS must adequately consider and analyze the cumulative impacts on long-term forest productivity, fish and wildlife, recreation and subsistence," including combination impacts including past, present and future logging in the project area and in a number of specified nearby project areas. SEACC, *ibid.*, p.3.

63. "Of particular concern from a (cumulative impacts on) subsistence standpoint is habitat fragmentation. There is a dearth of well connected, old-growth habitat on Northwest Baranof as a result of past logging activities, and additional logging would exacerbate this

fragmentation ..." SEACC, *ibid.*, p.3.

64. "... ALL of the immediate actions recommended by the Interagency Viable Populations Committee, in response to the scientific peer review ..., must be included to ensure the maintenance of viable wildlife populations as required under the National Forest Management Act (NFMA)." SEACC, *ibid.*, p.3.

65. "The Interagency Committee has also recommended establishing "small" HCAs in each large watershed on a project basis." SEACC, *ibid.*, p.3.

66. "Finally, the Forest Service must do more than merely maintain viable populations of wildlife -- ANILCA requires the agency to maintain healthy populations of subsistence species. SEE U.S.C.Sec.3112(1). Accordingly, the alternatives considered in the DEIS must provide, for healthy, harvestable populations of subsistence fish and wildlife resources." SEACC, *ibid.*, p.4.

67. "Similarly, the PACFISH management strategy for protecting anadromous fish habitat (i.e. the use of 300-foot riparian buffers ...) must be incorporated into the alternatives considered, as it represents the best scientific information presently available on how to protect anadromous fish habitat. In this regard, NFMA explicitly states that the Forest Service must 'insure' that logging ... does not seriously and adversely affect water conditions or fish habitat." SEACC, *ibid.*, p.3.

68. "The Forest Service has not established that the 100-foot riparian buffers ... adequately protect fish on the Tongass. Accordingly, NFMA compels the full implementation of habitat modification measures consistent with the PACFISH strategy ..." SEACC, *ibid.*, p.3.

69. (As an interjected note to add now to these earlier scoping comments, in light of recent legislation, if the planning team feels constrained from freely considering and implementing all possible management methods to protect fish and wildlife population viability, it is not legitimate for the DEIS to claim, as it has, the "Ecosystem Management" is being pursued in this project.)

70. "PROPORTIONALITY: ... TTRA precludes the practice of high-grading (...). Although the high-grading prohibition was targeted specifically at logging under the long-term contracts, it was clearly intended to be forest-wide in scope, as evidenced by the following statement of Rep. George Miller, the House leader in the Conference Committee on the TTRA: 'The high-grading prohibition is extremely important. It constitutes one of the most critical reforms in both the long-term contracts and Forest Service management practices. The intent is to spread the harvest of the highest volume timber over the rotation, thus providing for sustained yield of the Tongass resources. ... [high-grading] should be stopped. Whether by the long-term contract holders, or by independent operators. 149 Cong. Rec. H12834-35 (Oct 26, 1990)(emphasis added)." SEACC, *ibid.*, p.5.

71. "... the Interagency Committee has recommended that the high-grading prohibition be applied to volume class 5 stands, so that logging in volume class 5 stands does not exceed logging in volume class 4 stands. SEE Viapops Reconciliation Report at 9." SEACC, *ibid.*, p.6.

72. "The DEIS must disclose accurate information regarding fallow in the project area and in other proposed sale areas in the vicinity, in order for the public to ascertain the

environmental consequences of the proposed sale." SEACC, *Ibid.*, p.6.

73. "NFMA restricts the use of clearcutting to situations where it is 'consistent with the protection of soil, watershed, fish and wildlife, recreation, and aesthetic resources, and the regeneration of the timber resource.' 16 U.S.C. Sec. 1604(g)(3)(F)(v). ...it appears that clearcutting, in many locations, would not protect and preserve these uses. Accordingly, the DEIS must contain a thorough analysis of the potential impact of clearcutting on these other uses, and ... alternative logging methods must be explored in the DEIS." SEACC, *Ibid.*, p.6.

Note: It is apparent from Sitka's vote this month's on Proposition 2 that at least half the populace believes that "clearcutting and similar logging methods" are not consistent with the required protections in the project area. There are substantial amounts of logging by such methods in all action alternatives in the DEIS. Further, although some alternative logging methods were considered in the DEIS, their appropriateness on such a large scale is highly questionable in view of past logging impacts, and more appropriate methods (e.g. single tree selection) on a smaller scale were not considered.

I. DEFINITIONS OF KEY TERMS USED IN THE DEIS VIRTUALLY GUARANTEED THAT ISSUES RAISED IN PUBLIC SCOPING WOULD NOT BE FAIRLY ADDRESSED.

Bias is obvious throughout the DEIS through the terms that are used and how they are defined. And example of one word that should not be used at all regarding old-growth logging is "Harvest."

Inappropriate definitions of key terms set the planning process in the wrong direction from the beginning of the planning process, and usage of these terms conceals impacts from the public.

DEFINITIONS FROM THE GLOSSARY:

'Ecological Approach.' The definition does not address the adequacy or thoroughness of the consideration to be given.

'Ecosystem Management.' The definition does not divulge how social, physical, economic and biological needs are 'blended.' The management approach used is more economic than ecological, bellying the propaganda slogan 'ecosystem management' that is used. Economic System Management is what is truly being practiced here — the antithesis of what would truly and literally be 'ecosystem' management. The definition fails to mention that the 'healthy ecosystems' it seems to promise will be unnatural, highly manipulated ones, at risk from the combination of the significant manipulation and lack of adequate ecosystem knowledge and analysis.

'Old Growth.' This is a biased definition, emphasizing qualities to justify logging but omitting the greater ecological value of the these stands compared to second growth.

'Productive.' This definition is hopelessly vague because of its dual meanings. It is therefore a term which should have been avoided in the DEIS, yet it was commonly used. Generally, it is a "feel good" propaganda word.

'Silviculture.' The definition should state 'second growth trees' rather than 'forest trees.' Generally silviculture is not needed to maintain old-growth ecosystems, but is instead the practice of managing tree plantations.

'Stewardship.' The definition is incomplete without addressing the risks of mismanagement, either intentional or unintentional. Management should not necessarily be defined as 'caring' — often it is risk taking or sacrifice.

'Volume Class.' The definition does not mention that higher volume classes have higher habitat value for forest dependent species.

PART III. FALLDOWN:

(This topic should have been more fully addressed in the DEIS. There is not sufficient time in the comment period for us to comment further, however.)

PART IV. LEGAL ISSUES.

(Legal issues concerning NEPA, ANILCA, TTRA, NFMA and MUSY have been addressed substantively in our comments on other logging projects in the Sitka Ranger District and in appeals we filed independently or with others. Since the issues are much the same for this project, for conciseness we incorporate all of these comments and appeals here by reference.)

PART V. PAGE-BY-PAGE COMMENTS:

Page 1-8, sidebar: Some resources have both amenity and commodity (or economic) value, for example most subsistence resources.

Page 1-10, sidebar and body text: Writing desired future conditions as if they already exist is utterly confusing to the reader. This approach should be dropped, and future tense should be used.

Page 1-11, "Geology ..." subsection: No proof is made in the DEIS that "cumulative" and long-term effects of the project will be limited. In large part this is because cumulative impacts analyses of the project are substantially defective.

Page 1-11, "Vegetation" subsection: The critical information of what proportion of managed to unmanaged timber stands will remain is not given. The proportion remaining of each old-growth timber volume class — vital information — also is not given. The statement, "This mosaic is similar to what has existed since timber was first harvested in the mid-twentieth century ..." is simply not true, in view of logging since that time and under this project. The number and size of areas retained in their natural state, and the volume classes of old-growth timber they will contain — all vital information — is not provided. In sum, no important information is provided here, and everything that is stated begs the question of the real issues.

Page 1-11, "Fish & Wildlife" subsection: It is claimed that habitat diversity will not change substantially in 50-years. Even if this is true (we do not believe it for a minute), the statement ignores substantial cumulative impacts on habitat diversity caused by past logging in the project area and other nearby project areas. This section mischaracterizes concerns over wildlife populations, dismissing fluctuations as unimportant and completely

ignoring population trends likely to be adversely influenced by impacts of the project. This DEIS (elsewhere) and the Ushk Bay FEIS clearly admit that proposed logging will cause reductions in deer populations (for example).

Future cooperation between state and federal agencies is not a function of the effects of this project, therefore is improper in this section, and cannot be predicted with certainty in any case.

Page 1-12, "Silviculture ..." subsection: "The majority of the project area is managed for a variety of uses, with emphasis on managing both for amenity and commodity oriented uses in a compatible manner." As in the "Vegetation" subsection, this is cornucopian begs the real questions. Numbers are needed but not provided.

"As a result, potential timber yields are reduced to protect important biological and social values." This is an admission that sustained yield will be exceeded by the current project. Again, key numbers are not provided.

"Silvicultural prescriptions recognize the effects of color, tone, texture, Elsewhere in the project area, silvicultural prescriptions are developed that meet scenic, vegetative, wildlife and timber objectives." Silviculture is a discipline for managing tree plantations. The objectives that it is able to satisfy for the listed concerns are limited at best, and significantly the statement does not reveal these objectives. This section holds out a largely hollow and non-specific promise.

The kind and extent of "opportunities" for further intensive LUD IV VCU's are not revealed, and it is uncertain what designation these VCUs may receive in future Forest Plans over the next 50 years.

Page 1-12, "Hunting, Fishing & Subsistence" subsection: The DEIS states, "Much of the project area continues to be managed in a near natural state with corresponding hunting, fishing, and subsistence opportunities." How "much" is this, and how much of it is rock, ice, muskeg and low volume timber?

Predictions made in this subsection have no basis in view of cumulative effects of this project combined with past harvest.

"The remainder of the area is managed for short-term activities, such as timber harvest Timber harvest is not a short term activity — its impacts will be present for centuries! This statement, with the misunderstanding and short-sightedness it exhibits, is a prime indication of what is wrong with this project and DEIS. "This does not change long-term hunting, fishing and subsistence use patterns." Another example of cornucopian fantasy, and a contradiction of other parts of the DEIS (there is a substantial possibility of a substantial reduction in subsistence resources).

There should have been a statement that a logging induced reduction in deer numbers will persist into the foreseeable future.

Page 1-12 to 13. The subsections on Recreation, Heritage resources, Lands, Transportation, and Facilities are similarly flawed.

Page 1-13, "Southeast Ak Economics": Long-term compatibility of logging with the other two economic sectors cited is uncertain without major changes in the timber program.

This prediction is cornucopian. Also, it omits a very important economic element — subsistence, with which logging conflicts. Past and present logging will adversely affect subsistence as their full impacts become apparent over time.

Page 1-13, "Sitka Economics": Same comment as for the Southeast economy. Past logging and this project will adversely affect subsistence as their full impacts become apparent over time.

Page 1-14, "Personal Economics": The degree to which incomes and subsistence activities are diminished compared to the present is the question, and it is not answered here.

Page 1-14, "Community Values": Another major factor in community stability has been the ability to engage in subsistence. Past logging and this project will adversely affect subsistence as their full impacts become apparent over time.

Page 1-15, "Public Involvement": The scoping process was a sham. A poor job was done of extracting significant issues from public and agency comments because a systematic analysis of comments was not made. The efforts of the public and agencies in commenting was therefore largely wasted. This was confirmed in recent meeting (Sept. 1995) between SCS, the planning team leader, and other planning team personnel.

Page 2-1, "Ecosystem Management": The section is self-congratulatory rather than analytical and informative. The definition of Ecosystem Management is problematic in that it substantially represents a continuation of old methods of management with only a new fascia, and in that it is contrary to strong and plain implications of the term to public. These strong implications have been reinforced by Forest Service propaganda which casts Ecosystem Management as a dramatically new approach to forest management — making the agency look good while it continues with much the same old program. (See other discussion above.)

Page 2-2, bulleted items: Conspicuous in its omission as a bulleted item is maintenance of old-growth characteristics in existing old-growth stands. This is what the public believes ecosystem management means — literally maintaining the ecosystem structure while utilizing it.

Page 2-2, "Application of Appropriate Silvicultural Treatments": Whether or not the "treatments" proposed are in fact "appropriate" is controversial. The biased word appropriate is unfitting here. The terms "treatments" (used here) and "prescriptions" (used elsewhere in the DEIS) are also loaded terms that are unfitting. Because of their medical lineage, these terms carry a connotation of clinical precision and scientific basis. In forestry, the treatment or the prescription are often, rather than a cure, no more than a means for the agency to justify an action that a large segment of the public finds objectionable, despite the mitigations provided.

Page 2-2: "They then designed silvicultural treatments for timber harvest ..." This is self-serving gobble-dee-gook. "... which mimic (natural) disturbance patterns ..." This is untrue. The scale of the disturbances is greatly different, there are significant differences in the man-made and natural disturbances even though they may seem similar in some ways, and natural disturbances in the Project Area will continue to occur in addition to the man-made ones, not be replaced by them.

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Page 2-2: The four categories of 'harvest methods' were not 'developed' "based ... on site visits and analysis of data gathered during visits." These methods pre-existed in the field of forestry, and a decision was simply made to apply them here.

Page 2-4, "Seed Tree Cut": While the diversity of tree species may be retained, the functional diversity of tree sizes and canopy cover is lost, long-term. This must be made clear, and without such a statement, the paragraph is biased.

Page 2-4, "Overstory Removal": It is stated that, "Important old-growth attributes (significant large tree component, snags, and large down woody material) can be retained. Although this "can" be done, the crucial questions of how often and to what degree it "will" be done are not posed, much less answered here or anywhere else in the EIS. Further, impacts of this method on wildlife habitat may still be substantial, yet are not discussed. The paragraph is biased.

Page 2-4, "Group Selection": This paragraph is also biased. It is stated: "Removal of the original stand would occur over approximately 80-120 years ... This would result in a variety of age classes and size classes present across the unit through time." This is presented as a benefit; however, the consequences of converting old-growth habitat to a narrow range of age and size classes is not mentioned, especially if this is done on a large scale in the Project Area.

Page 2-5, 1st paragraph: It is stated, "Group selection mimics wind disturbance patterns occurring across much of the Northwest Baranof Project Area." Not Wind disturbance rarely takes entire stands over a time period of 80-120 years, and does not do so on the scale contemplated in the project. These man-made disturbances will be in addition to natural blow-down, and we already have enough blow-down, thank you.

Whether or not group selection mimics "patterns" of natural wind disturbance is only part of the question. In terms of forest ecology, since the tree bodies are removed during group selection, there is no mimicking of the natural disturbance.

It is also claimed here that a "diverse, multi-layered canopy is produced." While this may be true relative to second growth growing in a clearcut, the diversity and degree of layering compared to the original old-growth that is removed will usually be dramatically less. Again, bias is obvious in the DEIS.

Page 2-7, "Interdisciplinary Analysis": In the statement, "... we must sustain the diversity and productivity of the ecosystems we manage," the terms sustain, diversity and productivity are all vague. Significantly, maintaining the natural character, health, and (to the degree it exists) stability of the ecosystem were not mentioned.

Page 2-8: "In this (DEIS), five alternatives explore ways to satisfy public concerns and resolve the issues discussed in Chapter 1." The issues discussed in Chapter 1 are addressed incompletely in the EIS, and a large number of significant issues raised during public scoping are not addressed at all. Consequently, the four action alternatives represent a very narrow range that does not adequately represent the ways that public concerns might be satisfied. Additionally, the Forest Service has not previously exhibited any disposition to adopt a no-action alternative for a Tongass logging plan, so referring to the five alternatives is likely misleading.

The DEIS also states here, "Collectively the (action) alternatives were developed to explore ways to satisfy public concerns and resolve issues, while responding to the purpose

and need for the project." This claim is baseless since issues and public concerns surrounding this project were never fairly determined.

Page 2-8, "Alt. Development," 3rd paragraph: The "landscape level" view of effects of management practices avoided, improperly, cumulative effects involving lands beyond the project area. This paragraph is biased, implying that adequate work has been done, when it has not been.

"At the landscape level, we maintain large tracts of undisturbed old-growth by concentrating timber harvest in certain areas ... (etc.)" This bald statement is baseless because of its generalities, and dangerous because of its placement in Chapter 2, which may well be the focus of the decision makers attention. How much of this "undisturbed old-growth" is unproductive forest? How much of it is low-productivity Volume Class 4 old-growth? Given the nearly total loss of Volume Class 6 old-growth to past logging, how much of the increasingly important Volume Class 5 old-growth will remain undisturbed, and more importantly, how much of the better quality component of Volume Class 5? Also, how much of these volume classes and components will remain after additional logging entries are made in pursuit of sustained yield of timber?

Page 2-8, last paragraph: "... and provide for stand diversity by leaving snags in harvest units ..." This is only a temporary measure — when these snags eventually fall, they will not be replaced.

Page 2-9, "Alternatives Eliminated ...": It is stated that only three alternatives were eliminated from detailed study. In fact, other alternatives representing alternative paradigms for the timber industry were requested by the public during scoping, but received no consideration at all.

Page 2-9, "Proposed Action": This section misleads the reader, through understandable confusion, to believe that Alternative 1 is the Preferred Alternative (see also the subsection title on page 2-10). The real Preferred Alternative is not mentioned until page 25 of the chapter, 16 pages later. Adding to the confusion, Proposed Action is part of the title of this DEIS chapter — "Alternatives Including the Proposed Action." Although the Forest Service made a press release attempting to correct this misconception (at our request), substantial confusion likely still exists. This is especially true since the DEIS Summary volume makes no mention what ever of the Preferred Alternative ... only the Proposed Alternative.

Page 2-10, "Alternative 1": The DEIS states, "Wildlife habitat and subsistence resources are maintained along the north ..." and "... current visual quality ..." would be maintained from ... to ... The important considerations of where these resources are diminished and how much are not mentioned. The paragraph is therefore biased. Also, outside of the narrowly defined locations specified in the statement, these resources will be impacted, another exhibition of bias. We believe the DEIS statements are false, and that the resources mentioned will not in fact not be maintained by this alternative.

It is also stated in the DEIS that this alternative for increased motor vehicle and other access. Alternative methods of providing such access, should there actually be a significant for it, were not mentioned — for example simply clearing existing logging roads.

Page 2-10, "Alternative 2": The language, "This alternative maintains the existing conditions in much of the ... Project Area by deferring timber harvest in many of the areas

which have seen only limited harvest in the past" is very loose language. What is "much" and "many"? What about an important area that has seen limited past logging that will be logged intensively by this alternative — the peninsula between St. John Baptist Bay and Nakwasina Passage? This statement is unsupported, biased, and false.

The description of this alternative does not, but should, describe how the alternative places new cutting units up against large existing areas of second growth in the Rodman Bay/Duffield Peninsula area. Twenty miles of nearly continuous modified habitat would be created, with but few, small wildlife corridors intervening. This kind of land management is unconscionable.

Page 2-11, "Alternative 3": The description of this alternative does not, but should, describe how the alternative places new cutting units up against large existing areas of second growth in the Rodman Bay/Duffield Peninsula area. Twenty miles of nearly continuous modified habitat would be created, with but few, small wildlife corridors intervening. This kind of land management is unconscionable.

While the description notes that neither subsistence use areas nor visual quality south of Fish Bay would be affected, the description exhibits bias by not describing effects on other areas of subsistence use or with visual concern. Also, it is not mentioned that displacing hunters who currently use the Schulze Cove area is likely to adversely affect subsistence hunters closer who use the area south of Fish Bay.

Page 2-11, "Alternative 4": The description of this alternative does not, but should, describe how the alternative places new cutting units up against large existing areas of second growth in the Rodman Bay/Duffield Peninsula area. Twenty miles of nearly continuous modified habitat would be created, with but few, small wildlife corridors intervening. This kind of land management is unconscionable.

Page 2-13, "Comparison of Alternatives by Issue": Many significant issues have not been addressed in this DEIS or the planning process because the results of scoping were not adequately analyzed. Therefore this section is seriously deficient through omission — the comparison of alternatives is incomplete. Also, the varying degree to which each alternative would to the desired future condition of the Project Area (see Chapter 1) is not compared.

The comparisons made are entirely quantitative and are simplistic to the point of meaninglessness. For many issues, qualitative and sometimes site-specific comparisons, as well as quantitative comparisons, are necessary to adequately present differences between alternatives.

Page 2-13, "Fish Habitat": The DEIS states, "Our evaluation in Chapter 4 shows that the potential effects on fish habitat and related water quality are minimal for all alternatives." We do not believe this to be true, and as shown on page 4-5 there is significant potential for more than minimal effects, from routine logging and roading activities as well as events such as landslides that are more difficult to predict. Page 4-18 ("Fish") indicates to the contrary that potential effects of this project on fish habitat may not be minimal. It cites as "primary impacts": "unplanned events such as mass wasting or large scale blowdown; roading through wetlands, streams or riparian areas; sediment from roads; short term changes in the magnitude and frequency of stream discharge due to either "timber harvest" or "interception of ground water by road cuts, and by consolidation and redirection of flows by road drainage structures."

In addition, page 4-15 cites between 512 and 895 acres of logging units (844 acres for the preferred alternative) with "high hazard soil with direct or indirect sediment delivery potential" to Class I streams. Roads add 26 to 57 acres to this (28 for the preferred alternative). While the road acres are smaller, road erosion is weighted more heavily than logging unit erosion (see 4-15).

Page 2-13, "Wildlife Habitat Populations": Table 2-3 does not show "potential reduction" in wildlife habitat capabilities, as claimed. As discussed elsewhere in our comments, the habitat capability models upon which this table is based are crude and are not suitable for making predictions of this type.

In addition, effect of the project on habitat capability is not even considered for many other species of concern, for example the marbled murrelet and brown creeper. If insufficient information is available to predict effects on these species, this should have been stated rather than simply omitting mention of the species.

Page 2-14, "Old Growth": The definition provided here for old-growth differs from the definition in the Glossary. The definition provided here is in substantial deviance from standard definitions, which include all old stands of timber, regardless of volume per acre. From our discussions with planning team members this has apparently caused confusion on the planning team as well as with the public. That different planning team members may have used different definitions of old-growth casts doubt on the accuracy of the data presented in many of the tables in the DEIS.

Significantly, the issue over which the alternatives should have been compared here is not "old growth," but "volume classes" of old-growth. Volume class is the single most important indicator of habitat importance for deer and other species (ADF&G). Substantial impacts of the alternatives and varying impacts among them can be masked by looking at all old-growth of Volume Class 4 or above, as has been done in this section. The comparison in Table 2-4 is therefore completely meaningless.

Page 2-16, "Subsistence": "Our evaluation of subsistence use of deer indicates that there is a significant possibility of a significant restriction of subsistence use of deer in the Project Area for Sitka residents regardless of the alternative selected."

The great significance of this statement is that it is made without the benefit of an adequate cumulative effects analysis that considers the total effect of all past, current and planned logging activities in all VCU's used by Sitka subsistence hunters. The impacts of the timber program, of which the NW Baranof Project is a part, on subsistence deer hunting will be far greater than the Forest Service has recognized (or admitted).

Page 2-16, "Recreation": The DEIS states, "The change in recreation setting because of timber harvest and/or road construction activities may affect the recreational experience and, therefore, overall satisfaction of the forest visitor." Key unanswered questions are: What kind of changes are good, in what amounts, and where? This is not addressed here in the DEIS, yet this chapter is where the decision maker is expected to focus when reaching his decision on the project. The above are key questions for Sitka both socially and economically.

Table 2-6 is useless in judging between alternatives. Gross percentages are not what is important — what is important is effects on particular places. What can be said from the

table is that it is astounding that this project will by itself change between 4% and 8% of the natural "recreation settings" in this large project area. Significantly, cumulative impacts on recreation settings by this project, past logging and likely future logging are not considered here.

Pages 2-16, 17, "Scenic Quality": The only basis provided for comparing alternatives is Table 2-7. This table is generalized to the point of being meaningless. What is important is the effect on each particular area within the Project Area. Tables listing places and effects on them by alternative should have been provided.

Page 2-17, "Economic and Social Quality": Table 2-8 is the sole basis provided for comparing the economic and social effects of the alternatives. This table exhibits extreme bias. There are a number of serious problems with the comparison that is made. (1) It is not revealed how long the job and wage benefits displayed will last; (2) It is not stated how many of these jobs are likely to be held by Sitka residents Alaskan residents; (3) the table addresses only "Timber-Related Employment and Income," ignoring all other employment and income in the Sitka economy and adverse effects project logging (cumulatively) is likely to have on the Sitka economy and employment; and (4) the economic importance of subsistence is ignored.

The title of this subsection, "Economic and Social Quality," is not fulfilled by the contents of the subsection. Jobs (but of only one kind) are looked at, but not the economy. And social quality is not discussed at all.

What is completely missing is an assessment, by alternative, of the effect of lost recreation opportunities, lost visual quality, and reduced populations of fish and game (all viewed cumulatively) on major existing segments of the Sitka economy: subsistence, ecotourism, recreation, commercial fishing, etc.

Among the comparisons that need to be made in this section are: (1) long-term economic benefits under the No-Action alternative vs. the short-term benefits from logging under each of the action alternatives, and (2) economic benefits foregone, both long-term and short-term, by each of the five alternatives.

Page 2-18, "Table 2-9, Comparison of Environmental Consequences": At the bottom of the table, number of jobs and wages are not environmental consequences! However, the other topics of the table are consequences of providing these jobs from the project area. Significantly absent is display of economic factors that would be adversely affected by the project. Another example of bias in this DEIS!

The table is too broad and non-site specific to be of any real value in comparing the alternatives, especially given the incomplete job done in the preceding subsections of the comparison section.

Page 2-19, "Actions Common to All Alternatives": This title is a misnomer. The section applies only to "action alternatives," not "all" alternatives (which includes the no-action alternative). This is evidence that the Forest Service considers the No-Action alternative a truly non-alternative, and just a baseline.

Page 2-19, "Roads": The DEIS states, "Roads may be physically or administratively closed, obliterated, or maintained open." The specifics of this should have been presented

via maps in the "Comparison of Alternatives" subsection.

Page 2-22, top: Since exceptions are provided for, 100 acres is not the "maximum" for a clearcut. This sentence should be corrected.

Page 2-22, Table 2-10 (plus separate project maps): All of the units proposed to be over 100 acres in size, except one, are on the east side of Redman Bay near Appleton Cove. These units should not have been included in the project — making exceptionally large cuts in an area already so heavily impacted is unjustifiable on the basis of "relative total costs." The other large unit, #3012, should not have been considered despite the prevalence of mistletoe — there has been excessive disturbance in the surrounding area already, more disturbance should not be added.

In fairness, this subsection should quantify the size of each cumulatively disturbed area that will result in the Project Area for each alternative. While the Forest Service does not consider an area a clearcut once the regrowth is five feet high, the public generally does not see it that way.

Page 3-1, Chapter 3 "Affected Environment": In this entire chapter, uncertainties or gaps in knowledge about the affected environment of the Project Area are not acknowledged generally and are rarely specifically identified. This casts a shadow over the accuracy and applicability of the view of the affected environment that is presented in this chapter.

Page 3-1, Table 3-1: It is unclear from Table 3-1 whether the data for VCUs300 and 302 for the entire VCU or just the portion within the Project Area. After some research we confirmed the latter; however, this information should be made explicit in the table.

Page 3-2, top: Biased pitches start early in Chapter 3 with the description here of Ecosystem Management. This chapter is supposed to describe the affected environment, not management philosophy.

In addition, the implied definition of Ecosystem Management made here differs substantially from the two other definitions of the term, offered on page 2-1 and in the Glossary.

Page 3-9, Table 3-2: In terms of soil erosion, the affected environment of this project is not the project area as a whole, but rather the lands of the unit pool and road pool, and adjacent places that elements of these pools will interact with in terms of erosion. Separate tables should have been provided for each alternative plus the total pools, presenting and characterizing the soil environment that would actually be affected by each alternative. Such a presentation would have meaning. The present table, while interesting, has none.

Page 3-10, "Old-Growth Forests": The DEIS states, "Most of the commercial forest land in the NW Baranof Project Area is considered old-growth." In fact, 24 percent of the CFL is previously harvested second growth and 76 percent is old-growth — a more informative statement that is not presented anywhere in the DEIS.

Page 3-10, same paragraph: "Much of the timber in these climax stands is of declining commercial quality, although it is suitable for the production of pulp and lumber." This exhibits bias, in that benefits of old-growth for wildlife is not mentioned in this subsection at all. The statement is also incorrect — old-growth stands are by their nature generally at a steady state in terms of commercial quality. Thus, two kinds of bias are shown in this paragraph — these stands do not need to be cut down to prevent them from going to waste.

Page 3-10, same paragraph: "Old-growth stands exhibit wide variance in structure ... and this variance in structure has important implications for wildlife. Volume class (a way of viewing structure) is the single most important forest stand characteristic for determining the importance of a stand as deer winter habitat; the higher the volume class, the better the habitat (ADF&G). Also, the higher the volume class, generally the higher the value of a stand as timber."

Consequently, it is amazing that Table 3-3 does not break down old growth by volume class. It should show the original acreage of old-growth in each volume class, and the amount remaining. TLMP retention acres should be presented by volume class too, and should be shown on a map. The existing table is of little value.

Table 3-3 is also troubling in that it does not highlight the non-standard definition of "old-growth" (as given on page 2-14) which is implicit (but not obvious so) in this table.

Page 3-12, "Forest Diseases": This subsection is highly biased. Old-growth forest stands are generally at a steady state in terms of tree condition. Merchantable volume is somewhat of a constant, and the death and decay of individual trees is therefore not a "loss," it rather is part of a continuum. The implied conclusion of the view presented in this subsection is that all old-growth should be converted to second growth to prevent "losses" of wood fiber. We reject this philosophy, and find its inclusion in the DEIS to be highly disturbing.

Page 3-13, "Wind": The discussion is too general. Other parts of the DEIS advocate logging that mimics natural disturbances, including wind throw. It is therefore crucial that the total existing and typical annual amounts of windthrow in the Project Area be revealed. Necessarily, this will involve acquiring data for wind disturbances on several scales.

Since "generally speaking, large-scale blowdowns are absent from the (NW Baranof Project) area," if cutting units are to be claimed to mimic wind disturbances elsewhere in the DEIS, a basis for the appropriate number and size of such man-made disturbances must be established here in the Affected Environment chapter.

Page 3-13, "Landslides": Confusingly, this is the second section on landslides within five pages of this chapter.

The condition of the Project Area in terms of past landslides needs to be revealed. How many are there, where are they located, and how can they be categorized in terms of size and elevation drop? How many are associated with past logging activities? This vital information is conspicuous in its absence.

Page 3-18, "Riparian Areas, Present Condition": The information presented here is obviously not specific to the Project Area. Project Area specific information is needed, and it needs to be presented in a site-specific, quantified manner.

Page 3-20, top: "Spawning gravel quality, fish habitat diversity, and channel stability have been impacted by previous riparian logging and road construction ..." A detailed discussion of this is needed. While more is said about Rodman Creek and Nakwasina River on the two following pages, the needed information still is not presented.

Page 3-21, "Fish": This section contains anecdotal information, but raises far more questions than it answers. We believe not all past impacts on project area fish streams have

been revealed, particularly ones that are more subtle but nonetheless important.

Page 3-23, "Old-Growth Forests": The non-standard definition of old-growth on page 2-14 remains troubling, and the definition given here is in conflict with it.

Page 3-24, Table 3-5 "Acres of Wildlife Habitat ...": This table is absolutely worthless for presenting the state of old-growth habitat in the Project Area. A breakdown by volume class should have been provided. Also, (and again) the non-standard definition of old-growth (see page 2-14) implicit in this table should have been flagged.

Page 3-25, "Sitka Black-tailed Deer": Deer habitat requirements were not adequately revealed. Citations to the large body of scientific studies should be made. The original (pre-large scale logging) and current states of deer habitat need to be discussed, but were not.

Page 3-24, "Brown Bear": The genetic uniqueness and isolation of bears on the ABC Islands is important and should have been revealed. Population estimates are needed.

Page 3-26, Table 3-6: We note that second growth is not marked as a preferred habitat for any species. The DEIS failed to carry this important information forward to Chapter 4 (Environmental Consequences), and failed to observe that this project will increase the proportion of second growth in the Project Area from 24% to 30% of the remaining amount of old-growth.

Separate tables for winter and summer habitat should have been provided, and columns showing volume class preferences should have been provided also.

Page 3-27, Table 3-7: This table is a dangerous and inappropriate use of habitat capability modelling outputs (see our extensive comments herein on modelling).

Page 3-31, second paragraph: The information on the marbled murrelet is very inadequate. If the scoping comments had been properly analyzed by the planning team, the following would have been revealed from the US Fish and Wildlife comments: "While we agree that more information is needed concerning the specific life history and population status of these birds in Alaska, there are sufficient indicators from elsewhere within their range (Washington, Oregon, California) that suggest a cause and effect relationship between loss of mature forest and reduced murrelet populations. Thus, we believe that a cautious management approach is warranted. Although a single action such as the current proposal may not adversely affect the marbled murrelet population, the cumulative impacts of region-wide cutting may have significant deleterious impacts. Thus, cumulative impacts of this proposal should be evaluated thoroughly..." (USF&WS, 10/21/94 scoping comments.)

USF&WS also said, "Preliminary marbled murrelet pre-breeding flight counts and intensive inventory surveys during the breeding season should be conducted at the site, and results included in the ... DEIS." There is a protocol for doing these surveys — they are cannot be haphazardly done. These surveys have not been done, nor of course have survey results been included in the DEIS.

These birds are common in marine waters around Sitka, are important to both the forest and marine ecosystems, contribute to the quality of life of Sitkans through viewing opportunities, and are an element in Sitka's attractiveness as an ecotourism destination and therefore have economic importance. It was irresponsible for the Forest Service to fail to

acquire the recommended information on these birds, especially since the USF&WS volunteer to assist in acquiring it. The DEIS is deficient as a result.

Page 3-31, 2nd paragraph: The DEIS states, "However, no (marbled murrelet) nests have been found in the Project Area." This is not surprising since the nests are extremely difficult to find. Surveys following the protocol must be used; relying on finding nests instead is inadequate. Saying that no nests have been found is a misleading and biased statement.

Page 3-33, 2nd paragraph: The DEIS states, "Forest health within the Project Area is impacted at varying levels by rots and decays, mistletoe, cedar decline, and insects." This implies a definition of "forest health" which we feel is improper — the statement is biased. The factors alleged to cause impacts are quite natural, old-growth forests have evolved to accommodate them, and they are (with the possible exception of cedar decline) quite healthy. The problem here is that silviculturists view the Project Area as a tree farm. This is out of step with the public, which obviously (from the 10/3/95 vote on Proposition 2) views the forest as a natural and healthy system.

Page 3-34, "Commercial Forest Land": Proportions of the Project Area are given here as 40% CFL forest, 34% non-CFL forest, and 26% non-forest. We believe these figures differ substantially for those of all of Baranof Island and associated islands or for the City and Borough of Sitka as a whole. The Project Area and adjacent project areas such as the Kelp Bay project comprise the vast majority of the good timber land and good forest habitat on Baranof or in the Sitka borough. Therefore, it is essential to proper planning and fair public process for the DEIS to reveal the land and forest status not just for the Project Area, but for a considerably larger area of land as well. The forest status data needs to be broken down by volume class, not just CFL/non-CFL. All of this information is needed as the foundation for critical cumulative impact analyses in Chapter 4. This information is very conspicuous in its absence in the DEIS.

Page 3-35, Table 3-12: This table needs to be broken down into two tables, one for old-growth and one for second growth. This kind of information needs to be presented on a larger-than-Project-Area as well as Project Area scale (see comment about page 3-34).

Page 3-38, Table 3-14: This table shows only timber taken by APC. This should be expanded to show all timber taken from the Project Area, going back to the earliest records.

Page 3-40, 3rd paragraph and table: 81% of 1439 hunters being successful does not equal the 552 successful hunters shown in the table. This puzzle is not explained, nor are the years of the hunter data given.

Page 3-42, "Subsistence": The Forest Service should explain here why it perpetuates large-scale logging even though it acknowledges the negative impact of such logging on subsistence.

Page 3-43, "Subsistence Use Areas": Greater reliance should have been placed on data from the scoping comments in terms of importance of various areas for subsistence. For example, the City and Borough of Sitka asked for no cutting in the Nakwasina area because of very heavy subsistence deer hunting use. Information such as this is critically important, yet is not fairly represented in the DEIS.

Page 3-45, "Sitka's Subsistence Use": This subsection is incomplete. Sitka should be described as the largest subsistence community in Alaska in terms of population. Percent of

Sitka households should be revealed, and the cultural importance of subsistence in Sitka should be revealed. Ditto for Angoon.

Page 3-51, map: All shorelines should be considered "existing recreation places" because of the growing importance of kayaks as a means of access. Kayakers travel very slowly and usually close to shore, so the condition of all shoreline miles are of great importance to them. Also, natural setting of high importance to nearly all kayakers, both resident and non-resident, travelling Sitka waters.

Page 3-73, "Community Economics": This section is incomplete. Subsistence is an important element of community economics, but is only mentioned in passing. No dollar figures are placed on the value of subsistence foods and materials that are gathered by Sitkans, yet the amount is substantial.

Page 3-76, "Timber Receipts and Payments": This section should make it clear that payments to communities depend solely on the size of the community's national forest landbase, not on how much timber is logged there.

Page 3-78, "Social Values": The DEIS states, "The paradox is that the social values which we are least able to define and measure are the very ones that appear to be of increasing importance to our society." This is why the Forest Service made a big mistake in not thoroughly analyzing the scoping comments, and why it should heed the strong trend in values indicated by the October 3, 1995 vote on Proposition 2 in Sitka.

The DEIS also states, "Although it appears that many in the community support a small timber industry to diversify the economy of Sitka, there is also considerable opposition to clearcut logging in areas considered to be in Sitka's 'back yard.'" This wording suggests a perceived inconsistency, but we do not feel one exists. We believe the people of Sitka desire a very small wood products industry that does not need to clearcut and which logs little, making its profits from craftsmanship rather than throughput of large amounts of wood processed in a capital-intensive manner.

Page 4-1, "Chapter 4, Environmental Consequences": The DEIS states, "All significant environmental consequences are disclosed, including the direct, indirect, and cumulative effects." This statement is blatantly false.

Page 4-1, 3rd paragraph: The DEIS states, "In this document we have identified a time period for the purpose of analyzing both indirect and cumulative effects. This time period is between the date of the Record of Decision (expected January 1996) and the year 2008." This time period is plainly inadequate for the purpose. First, it conveniently ignores all prior logging in the Project Area. This logging has been excessive, and will contribute dramatically to cumulative impacts that the project will contribute to. Second, considering impacts occurring up to only less than 10 years after completion of the project conveniently avoids considering all impacts of canopy closure on former old-growth wildlife habitat. The time frame selected is not only inadequate, it is deceitful.

Conspicuously absent on page 4-1 is revelation of what land areas will be included in consideration of cumulative impacts. It is apparent throughout the DEIS that this land area is limited to the Project Area itself; however, it is absolutely essential that all nearby past and present project areas be included, especially where wildlife and subsistence are concerned. This is explained elsewhere in our comments.

11d
Tiering of the cumulative impacts analysis to various versions of TLMP (see 4th paragraph, p.4-1) does not make up for the above shortcomings. Analysis specific to this Project Area, and considering other specific nearby projects, is necessary to fairly determine impacts.

12f
Page 4-1, 1st bullet: The DEIS states its assumption that, "These requirements (of laws, guidelines, and BMPs) are expected to be at least as stringent in the future as they are today." Current events have clearly demonstrated to the contrary — Senator Stevens has successfully passed budget riders that substantially circumventing law and weakening prior requirements, and Senator Murkowski has introduced legislation (S.1054) aimed at more permanent weakening.

Page 4-1, 2nd bullet: This assumption makes no sense as one used to assess reasonably foreseeable effects. How was this assumption applied in making effects assessments?

Page 4-1, 3rd bullet: This assumption is ambiguous. How was this a factor in making effects assessments?

2
Page 4-2, top bullet: The DEIS states, "The management emphasis of the current TLMP and TLMP Draft Revision for most of the Project Area includes commodity ... resources and their uses." This is purely a management consideration — it is independent from and should not be a factor in assessing environmental consequences. In addition, the attitude expressed here is contrary to case law in the Chatham Area which says that TLMP LUDs III and IV are permissive, not dictatorial, and is wholly inappropriate in this DEIS. In this light, deference should be given to the strong sentiment expressed by Sitka voters against further clearcutting (and similar logging methods) in the Project Area.

18X
Page 4-2, middle bullet: The DEIS states, "The No-Action Alternative would represent only a delay in implementing the TLMP ...". This assumption is inappropriate, for the same reasons discussed above, and because TLMP is in the process of being revised.

2/d
Page 4-2, 1st full paragraph: This timing contradicts the statement on the previous page that the cumulative effects analysis looks only at the period AFTER the record of decision. Which statement is correct? Significantly, there is no evidence that the other projects listed have been considered in cumulative impact analyses, and ample evidence throughout the DEIS to the contrary.

2/c
Page 4-2, 2nd full paragraph: "However, we do not know whether or not any additional timber harvest will be planned for the Northwest Baranof Project Area (in the West Baranof & Kruzof plan, which encompasses the Project Area) in the reasonably foreseeable future. As a result, no future harvest is projected for the cumulative effects analysis." Given that this has been done, then either the Northwest Baranof Project Area must be summarily excised from the West Baranof & Kruzof project area, or the Northwest Baranof Project must be summarily terminated. In addition (and if this project is not terminated) the cumulative impact analyses of this DEIS are deficient because it is apparent from this paragraph (of the DEIS) that cumulative impacts contributed to by both the remainder of the West Baranof & Kruzof project and the instant project have not been considered.

Pages 4-1 and 4-2: Suffice it to say that the Environmental Consequences evaluation of this DEIS is seriously flawed from its very foundation.

Page 4-7, "Soils, Long Term & Cumulative Effects": The DEIS states: "Slope failures may occur in increasing numbers from three to seven years after timber harvest and then

11d
taper off to near stable conditions within 15 years, after which the site can be said to be 'reclaimed' from management-induced mass wasting." Recent, widespread landslides on Prince of Wales Island (1993?) demonstrate that this statement is untrue. There were a number of serious slides in 40-year old clearcuts near Hollis, as well as in other cuts all over the island. Cumulative impacts of logging are not in fact limited to the 15 year period stated.

A discussed earlier concerning the two landslide sections in Chapter 3, the affected environment was not adequately described to allow meaningful analysis, as is apparent (see our earlier discussion) from the material present in this section of Chapter 4.

12f
Page 4-8, "Vegetation, Old-Growth Forests": The DEIS understates the amount of old-growth forest that will remain in the Project Area (claiming between 76 and 81 percent under "all" alternatives). The 81 percent figure is for the No-Action Alternative, and this should have been made clear. The action alternatives range between leaving 75.8 and 78.2 percent of the originally existing old-growth.

Page 4-8, the serious problem: The serious defect in the analysis on this page is that old-growth is not the appropriate way to look at the impacts of logging for important species such as deer — acres by volume class, not gross acres of old-growth, is the key factor that should have been presented (although there is nothing wrong with showing gross old-growth acres in addition).

Shockingly, when we asked for the needed data, the planning team had not had it prepared previously, and could not make it available in time for these comments! (Personal communications with Leon Mork 10/11/94 and Jim Thomas 10/12/94.) Volume class data is readily available on short-order only with old-growth and second growth aggregated, which makes the data worthless for evaluating effects on wildlife.

For this reason alone, if this project is to move ahead to an FEIS (we feel it should be terminated instead), a supplemental DEIS will be necessary first. Effect of the project on other important issues, including wildlife, subsistence, and recreation rest on how hard the better forest stands will be hit by this project. Economic and social effects rest in turn on the effect on those issues.

Although we have not been able to obtain needed volume class data for the Project Area, data we do have for the Sitka Local Use Area (as defined in Sitka's recent Proposition 2) shows that over 88% of the original volume classes 6 and 7 (combined) has been logged. This area includes the Project Area; however, we suspect that the figure for the Project Area (when obtained) may be even higher. This is a major issue.

11c
Page 4-17, last paragraph: The DEIS states, "We based cumulative watershed effects related to streamflow on total percent of the watershed harvested by alternative." These data should have been presented, not only by VCU but by stream. Continuing, "Only VCUs 291 and 292 are sensitive to minor changes in stream runoff as a result of cumulative harvest in Alternatives 2, 3 and 4." The possible effects of this sensitivity to even minor changes in stream runoff should have been discussed, and also the consequences and likely frequency more than minor changes in runoff.

12f
Page 4-18, "Fish": This section omits evaluation of the project in light of considerable scientific and other pertinent literature describing the need to protect salmon streams to well

beyond the 100-foot buffers. As a result, the section is seriously deficient.

Also, the DEIS does not reveal whether, or to what degree, or based on what criteria project stream buffers will be wider than the 100 foot minimum. This should have been revealed in the "Actions Common to All Alternatives" section, or else here. The language in the second paragraph is unclear as to whether only the minimal 100-foot buffer is provided in this project, or whether at least the minimum 100 feet is provided and sometimes more. The unit cards are no help on this, and should include specific information on buffer widths and other buffer requirements.

Page 4-18, last paragraph: The DEIS states, "Unplanned impacts to water quality and fish habitat may occur." Types of such impacts are then described. Continuing, "The risk of unplanned impacts is not quantifiable and increases with any development, including increased timber harvest and road construction." This simply states the obvious, and is not helpful in evaluating the potential direct, indirect and cumulative impacts of this project. At least a thorough qualitative evaluation is necessary if numeric data are not available.

Page 4-19, top: The DEIS states, "We can use the number of stream crossings and the total acres of units and roads within riparian areas to display potential impacts to fisheries and water quality." We disagree. While these may be factors in the resulting impacts, by themselves these numbers do not indicate (or display) the impact. The necessary evaluation is more complicated than this, and apparently has not been attempted by the planning team.

In addition, even if the simplistic approach suggested were adequate, only one table showing one of the factors claimed to be important is displayed. Therefore, even by its own inadequate standards, the evaluation is not complete.

Page 4-20, "Wildlife Habitats": The BMPs cited in the first paragraph should have been summarized in a footnote or provided verbatim in an appendix. The reviewing public does not have easy access to this information.

Page 4-20, 2nd paragraph: Table 4-13 does not meaningfully "summarize effects of (the) action alternatives on each habitat type." The citation for old-growth habitat, being an aggregate figure, has no value — It needs to be broken down by volume class.

Page 4-21, "Wildlife Species and Habitat Capability": Evaluation of wildlife impacts rests heavily and improperly on habitat capability modelling. We have described the fatal problems with such reliance elsewhere in these comments. We believe this heavy reliance has occurred because of the absence of data in the DEIS concerning volume classes.

Significantly, while the DEIS observes here that, "... the habitat capability should only be used as a basis for comparing alternatives, not for comparison with actual past or future population levels," the DEIS does exactly the opposite in many places.

Page 4-21, "Silvicultural Prescriptions": The Doerr study is new (1995) and should therefore be described in greater detail, detail sufficient to establish whether or not it is applicable to the Project Area and the significant issues of this project. For what kinds of deer habitat are the results indicative? And in what seasons or weather conditions was deer use increased, and by how much? The study (which we have not seen) is used without substantiation in a way that may well be biased, given the incomplete presentation of the study.

Page 4-21, 4th paragraph: The DEIS states, "The wildlife capability models were designed to reflect only the effects of clearcutting. As a result, the effects indicated by the models are more severe than we would actually expect." This statement is inaccurate, biased, self-serving, and extremely misleading. All factors affecting accuracy of the models must be discussed, not just one that works in favor of the project's Purpose and Need. There are significant problems with reliance on these models, as described elsewhere in our comments.

Regarding group selection logging the DEIS states, "We expect the harvest of selected gaps to have little effect on habitat capability for deer in the short term. Subsequent harvests will increase impacts." In other words, the models may not really be as "severe" as suggested. Clearly, evaluation of cumulative impacts including likely future logging on units cut using alternate logging methods is essential. But this evaluation is not in the DEIS.

Page 4-23, "Sitka Black-tailed deer": We have two complaints with the table. It should present comparisons with original (pre-large scale logging) deer capability, not just with present capability. Also, the premise of basing the deer analysis on habitat capability modelling is ill advised. Other evaluation is needed and should be emphasized over the modelling.

Page 4-24, "Brown Bear": Problems with the model for brown bears are acknowledged, yet the model is used as the sole means of impact evaluation anyway.

Pages 4-25 to 4-27: More heavy reliance on modelling, and more serious problems in the DEIS as a result.

Page 4-28, 2nd paragraph: The DEIS states, "Effects have been mitigated under all alternatives by maintaining a minimum 100-foot ... buffer ..." Mitigated how much? ... where feasible ... What was the criteria for determining feasibility?

Page 4-28, "Cumulative Effects": The DEIS states, "Cumulative effects in the project area ..." It is absolutely critical that the cumulative analysis also consider impacts from other nearby areas — since this was not done, the DEIS is fatally flawed.

The DEIS also states, "Cumulative effects result from ... and reasonably future actions. The time horizon for future actions was stated (p.4-1) to be the year 2008, less than 10 years after completion of the project. This is plainly an inadequate time horizon for evaluating cumulative wildlife impacts. For example, the DEIS contemplates logging methods such as group selection which intend to cut a stand in its entirety over two or three entries. These later entries will not occur within the 10 year time horizon, yet the plan establishes what is likely to be interpreted as a commitment (by the agency and the timber industry) to do further cutting in these stands. These are reasonably foreseeable cumulative impacts of this project, and must be accounted for.

Page 4-28, last paragraph & Table 4-19: Heavy reliance is improperly placed on habitat capability models for reaching or implying conclusions on cumulative wildlife impacts. Consequently, an adequate evaluation of such impacts has not been made in the DEIS.

Page 4-29, "Long-Term Productivity": The DEIS states that a number of species (specified) "... depend on old-growth and would experience decreases in long-term habitat

capability, particularly during critical times of the year." While this statement is important, it is too vague to be of any use in evaluating the effect of the various action alternatives. Each affected species needs to be discussed in detail relative to these decreases in habitat capability, with reference to both scientific studies and this project's field reconnaissance. Significantly, some of the species specified here in the DEIS were not given any substantive consideration in the DEIS — river otter, hairy woodpecker, and brown creeper.

Page 4-29, same paragraph: The DEIS states, "All wildlife are expected to be above minimum viable levels within the Ecological Province ..." This statement is unsupported in the DEIS and is indefensible. No project in the province (e.g. this one, Kelp Bay, SE Chichagof, and Ushk Bay) has done a cumulative impacts analysis that considers the effects of any of the other projects. The total effect of these projects is therefore unknown, and may be great. For example, we have determined from Forest Service data that 88 percent of the original acres of volume classes 6 and 7 (combined) old-growth has been cut. This is highly significant, and suggests that losses of volume class 5 (and especially the better component of this volume class) may have very serious impacts. Where winter habitat is involved, the effect may be disproportionately greater than the percentage of the range that is affected (Wallmo, et al., 1977).

Too, there is the question not just of maintaining viable populations, but huntable populations.

Page 4-29, Table 4-19: The "source" specified for this table is a misnomer; this is the preparer. The data source and model used are more properly the source, but are not revealed. This comment applies to many other tables in the DEIS as well.

Page 4-29, "Biological Diversity": The DEIS states, "... diversity of ... species ... would not be affected by the proposed action." No explanation is offered. We feel, however, that the genetic diversity of the brown bear population affected by this and other nearby projects should have been addressed.

Page 4-30, "Marine Shellfish": This section overlooks very important populations of dangerous crab in the Project Area. Also, the economic value of the commercial and subsistence fisheries are not considered.

Page 4-33, "Marbled Murrelet": "Without precise knowledge of marbled murrelet nesting habitat requirements, all old-growth with greater than 8 mbf per acre is assumed to be suitable for nesting." This is assumed to vastly over-estimate the amount of marbled murrelet nesting habitat in the Project Area. Combined with the lack of adequate marbled murrelet surveys satisfying established protocol, this overestimation of habitat injects a false sense of security into analysis of consequences of the project.

The DEIS states, "In the ... Project Area, between 0.72 and 4.53 percent of the old-growth forest habitat would be harvested, potentially resulting in a comparable reduction in habitat capability ..." In fact, not all old-growth habitat in the Project Area is suitable habitat, and if unfortunate choices are made for logging units, the percentage loss of murrelet habitat could be far greater than claimed above.

It is also claimed that "The Project Area is only a small fraction of the presumably suitable habitat in Southeast Alaska," and that "... any effects from this project would have minimal impact on the overall population in Southeast." This ignores that facts that a cumulative NEPA analysis of effects of logging throughout Southeast Alaska on the bird has

never been conducted and that the Forest Service is obligated to provide well-distributed viable populations. We want populations in the Sitka borough to remain viable.

Conspicuously absent on page 4-33 is any mention of the 10/21/94 scoping comments of the US Fish and Wildlife Service, which provided a firm warning concerning the murrelet and recommended planning actions the Forest Service neglected to follow.

Page 4-45, "Hunting, Fishing & Subsistence": The analysis presented in this section is based substantially on habitat capability models. Nonetheless, in the second paragraph the DEIS states, "Furthermore, these models ... are not reliable for comparison to actual harvest levels or populations needed to support them." Then this analysis proceeds to do exactly what it says is unreliable! In table after table for various species, population needs to support hunting are compared to output from the habitat capability models.

In addition, consequences for hunting, fishing and subsistence cannot be adequately analyzed on a single project basis. A cumulative analysis encompassing an area far larger than the Project Area is absolutely essential. In fact, there is no point in making analyses that are not cumulative for these forest uses, even when considering smaller portions of the project area. Displacement of hunters, fishers and subsistence users must be accounted for in all analyses.

Pages 4-45 to 4-34: The tables on these pages do not account for Sitka's increasing population.

Page 4-49, "Salmon": We are now out of time for preparing further comments. Fish and water quality are addressed in other parts of our comments.

Page 4-50, "Subsistence," 2nd paragraph from bottom: The DEIS states, "The evaluation relies heavily on wildlife habitat capability models ..." This was a big mistake, and the DEIS is fatally flawed as a result.

Page 4-50, same paragraph: The DEIS states, "This evaluation considers the availability of subsistence resources in the surrounding areas ..." This is therefore an absolutely biased evaluation. Presently available subsistence resources from adjacent areas are considered, while other cumulative analyses in the DEIS that are foundations for determining impacts on subsistence explicitly avoid considering the long-term impacts of logging in these adjacent areas and future displacement of subsistence users. Therefore, the evaluation discussed on this page adds presently available subsistence resources from outside the project area in order to diminish the apparent impacts of logging, while failing to these resources will ultimately be diminished, thereby increasing subsistence competition in the Project Area.

Page 4-51, 1st full paragraph: The DEIS states: "... there would be no substantial increase in competition for harvestable (subsistence) resources [that is, no substantial increase in hunting by non-rural residents]." Contrary to the parenthetical quote, there would be a substantial increase in non-rural residents because of the logging camps.

[AT THIS POINT WE HAVE RUN OUT OF TIME TO COMMENT
FURTHER AND STILL MEET YOUR DEADLINE.]



ka State Parks Citizens Advisory Board, Box 142, Sitka, AK. 99835

October 12, 1995

Mr. James Thomas, Team Leader
USDA Forest Service - Sitka District
204 Siginaka Way
Sitka, AK 99835

Re: Northwest Baranof DEIS Comments

Dear Mr. Thomas:

The Sitka State Parks Citizens Advisory Board has again discussed the proposed Northwest Baranof timber sales. Board members discussed several concerns about timber harvest units with roads and log transfer sites in or near popular hunting, fishing, recreation and subsistence areas. The area of most concern regarding proposed timber harvesting was the Nakwasina Passage/Sound, due to its high use by residents for recreation and subsistence purposes. Essentially, the concerns were much the same as stated in the Board's letter of October 19, 1994

Alternative 2 is the option Board members prefer. Listed below are concerns and comments that were generated while evaluating the proposed alternatives:

Alternative 1 - Nakwasina and St. Johns Bay both have rich estuary environments and are heavily used for recreation and subsistence purposes including deer and waterfowl hunting, fishing and crabbing. Another concern was the close proximity to the Allen Point recreational cabin. Members were concerned with the amount of cutting in vcu 288, 299, 300, 301, 302 and LTF in 287. There were no concerns of cutting in the Rodman Bay area. Concerns were raised with the close proximity of vcu 288 roads and harvest units close to Big Bear/Baby Bear State Marine Park.

Alternative 2 - Members prefer this option and recommend using the same LTF in vcu 301 that has previously been used. There is too much timber removed from vcu 302 which will alter the marine environment and the upland deer habitat, but it does not compromise the view for most boaters. There were no concerns of the amount cut and locations of Deadman's Reach and Rodman Bay harvest area. This alternative has the least widespread impact on the area north of Sitka which is heavily used for recreation and subsistence.

Alternative 3 - This alternative is acceptable except for the proposed road and timber harvest in vcus 287, 298 and the close proximity to the marine park. There is also concern of the LTF in vcu 287 located close to the recreation cabin. There is presently a great deal of hunting in vcu 288 and this could be affected by the road. Also, an increase in ATV use will likely result. Stream runoff and sedimentation could may increase in streams near the harvested areas.

Alternative 4 - Concerns were raised about the amount harvested in vcus 300, 302 and 287, 288. The road and timber harvested from vcu 287, 288 are close to the marine park. Deer hunting and crabbing could be affected in vcus 300, 302, 287, 288.

Members appeared to favor a combination plan that would incorporate their preferences and comments from Alternatives 2 and 3. Alternatives 1, 3 and 4 elicited many concerns, primarily because the harvest units were in or near cabins, Big Bear/Baby Bear State Marine Park and the impact on the areas near Nakwasina.

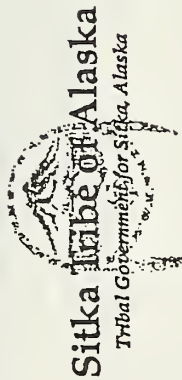
We appreciate the opportunity to voice our concerns regarding the proposed timber harvest sales on Northwest Baranof. Thank you.

Sincerely,

Marilyn Tedin
Marilyn Tedin
Chairwoman

K-84

261



Final Tribal Environmental Impact Statement for the Northwest Baranof Project October 16, 1995

Prepared in conjunction with the United States Forest Service in anticipation of the Northwest Baranof Timber Sales.

This statement is provided in addition to the Draft Tribal Environmental Impact Statement dated April 30, 1995, and the 3-overlay map identifying subsistence, cultural, and allotment values dated July 18, 1995.

This statement is divided into the following sections: 1) Analysis of Alternatives; 2) Comments by Tribal Staff; and 3) Written Comments by Tribal Citizens.

1. Analysis of Alternatives:

Information provided by Sitka Tribal Citizens to the Sitka Tribe, which was in turn provided to the U.S. Forest Service, demonstrates the "No Action Alternative" is the only option which avoids serious harm to the interests of Sitka Tribal Citizens.

The three major areas of concern are the following: Harvest units on the Peninsula below St. John the Baptist Bay; harvest units between Katlian Bay and Nakwasina Passage; harvest units just to the north of Rodman Bay. As you will see from the July 18, 1995 map provided to the Forest Service, harvest units in these areas fall within zones of high subsistence use as identified by tribal citizens.

After the "No Action Alternative", the preference of options - based on impact to tribal resources - is alternative 3, then 1, then 2, and then 4 as being the least favorable.

2. Comments by Tribal Staff;

A. Kiks.adl Survival March on National Register of Historic Places

The U.S. Forest Service should be aware that the Sitka Tribal Council formally resolved that the Kiks.adl Survival March Trail should be nominated for the National Register of Historic

Places. The staff of the Sitka Tribe are currently working on completing the registration form to send to the United States Department of Interior, National Park Service.

The areas of potential impact on the Survival March Trail are identified on the July 18, 1995, map provided to the Forest Service as a solid red line running the length of the project area from Nakwasina Sound to Rodman Bay. Should there be any confusion, the Forest Service archaeology staff will be able to interpret this map.

B. Comments on the Nature of Customary and Traditional Use

See attached "Letter of request sent to the Alaska Federation of Natives for the Elders and Youth Conference" excerpted from the September 13-14, 1994, Alaska Native Traditional Knowledge and Ways of Knowing Workshop. Sponsored by the Rural Alaska Community Action Program, Inc. And the Indigenous Peoples' Council for Marine Mammals.

This letter fairly expresses the concern of many Sitka Tribal Citizens that the areas proposed for harvest represent more than just "places to gather food."

For example, on more than one occasion when an Elder expressed confusion when asked to use a blue marker to identify allotments, a red marker to identify culturally significant sites, and a green marker to identify subsistence use areas. These people were "confused" because from their perspective it was wrong to distinguish between what was important to them about allotments, culture, and resources as food. Most importantly, there should be no distinction because to make a distinction is already to lose sight of what is important culturally, spiritually, and socially.

These areas of customary and traditional gathering include a distinct and crucial cultural component. However because the "way of life" they represent and maintain is not static or unchanging, these areas do not fit the typical definition of "cultural site". The use of these "sites" and areas by the Tlingit clans predates written history. The continued use of these sites and areas today serves to keep the cultural alive and connected with the present. Given the qualities and values associated with these areas, they deserve protection under not only the Alaska National Interest Lands Conservation Act, but also the National Historic Preservation Act and perhaps the American Indian Religious Freedom Act.

In addition, the Forest and Rangeland Renewable Resources Planning Act of 1974 as amended by the National Forest Management Act of 1976 (NFMA) specifies that an interdisciplinary approach will be used in land and resource management planning. Such a command is consistent with and verifies the perspective of those Elders who were "confused" by attempts to distinguish between the importance of allotments, cultural sites, and subsistence. Further, NFMA provides for the protection and management of culturally significant cultural resources. (36 CFR 219.24).

C. Comments of Traditional Foods Program Coordinator

It is the Forest Service's responsibility to meet Native objectives. The Sitka Tribe of Alaska recognizes and continues to exercise government to government relations through a series of meetings between the Forest Service-Sitka Ranger District and the Sitka Tribe of Alaska. Sitka Tribe's Culture Committee and the Subsistence Committee continue to give direction as to how STA should approach and take a stand on resource issues which affect us both directly and indirectly. By involving the elders, users and providers we can accurately involve STA in the decision-making process.

As the coordinator for STA's Traditional Food Program, I had a lot of input into decision making, but it was also the wish of the tribe to involve the Forest Service into understanding our beliefs and practices which are a way of life of a Native of the traditional area of the Sitka Tribe. It was my first goal as a tribal representative as a regional advisory council to have the federal government take over the management responsibility of fish and game, plants, herbs, medicines, shell fish, and fowl in Southeast Alaska. This includes applying the Katie John case to our area.

We, as being the descendants of the original inhabitants who were the stewards of the land, look forward to being involved in the opportunities between us.

Because Alaska is exempt from PACTSII, it is our desire that alternative 3 be our plan of choice or plan 3. The Kikadi Survival March Trail is so important that it should be designated on the National Historical Register.

3. Written Comments provided by Tribal Citizens

Carl See, 747-3345, 906 1B' Monastery:

I've just been made aware of existing cuts and proposed cuts for subsistence use. In my opinion there are already too many areas that are no longer available for subsistence use. I would believe that more cuts would in the immediate future endanger my lifestyle and my son's subsistence rights. He is only five years old now. What's to be left when he's of age? Who's to benefit from logging? When I was very young my father owned Big Gavanski, we used to spend weekends there.

Walter Moy, 747-8516:

I'm against cutting in this area because there's no timber industry; the Forest Service is cutting to justify their presence.

William 'Buddy' E. Howard:

All of Chichagof and Baranof coasts was a way of life to all of our Tlingit Nation. It was not limited to just those two islands. It was where ever we stopped to rest or to wait out a storm. When we put our feet back on the land we were back at home and were able to go to nature's cupboard.

Bob Carroll Jr., P.O. Box 6187, Sitka, Alaska 99835:

In regards to logging on Baranof Island/Chichagof. My interpretation of what you are planning is nothing short of total destruction of some of the richest land in the world. This

richness doesn't count in cash or commodities. It's wealth is in the woods and forest. The animals and berries we collect make me and my family healthy people. You threaten the health and livelihood of all our families by tearing down the forest for profit.

I own a 17-foot Bayliner. I fish, hunt, collect and distribute all with my family (10) plus Elders that cannot collect these sort of items do to age. My grandfather taught me to respect my Elders, but ultimate respect goes to the land. That's so that the land will sustain the people that live off of the land with minimal damage to the environment.

Speaking of damage... over the last five years I've been working as a longshoreman in Hoonah. Dora Bay, Long Island. I'm not impressed with the outcome of clear cutting. The forest is trashy looking, brushy, impenetrable, hard to hunt, stunted growth, overcrowded. Well, you get my point. No one will benefit from the outcome of such a project. Tourists will pick other destinations. Our economy is already hurting. You'll kill the salmon streams which in Sitka is one of the main industries.

Finally, it's hard for me to imagine something like this is even considered. After all, don't you think you killed enough trees and wilderness areas in the past 100 years. This is a big problem already with the green house effect taking place in recent years. We need all the lush green trees we can get... FOREVER...NOT on a short term either.

Letter of request sent to the Alaska Federation of Natives for the Elders and Youth conference

To: The Alaska Federation of Natives and the participants of the Elders and Youth Conference.

We the participants of the Alaska Native Traditional Knowledge and Ways of Knowing Workshop which was held on September 13 and 14, 1994 at the Rural Alaska Community Action Program offices, hosted by the Indigenous People's Council for Marine Mammals, and supported by the Bureau of Indian Affairs, agreed to the following.

Many of our elders need help which they may not be getting, particularly help in terms of sharing our traditional foods. This has occurred because our level of use of traditional ways regarding family and family values has changed. Many of us are institutionalizing our elders by placing them in care facilities away from their homes, families, and communities. The role of the elders and the respect shown them by ourselves has diminished in many communities.

We respectfully request that you provide us with guidance to be able to restore the treasure box of traditional culture, which is the family unit, which has always been our first school. We request that this be discussed at your meeting and that it be addressed in terms of steps we need to take to restore the proper role and respect of elders amongst our peoples.

Within our discussion we have been frustrated by our inability to communicate the breadth of our beliefs. We humbly request your assistance in finding a word or short phrase that better describes our traditional way of life. This word or phrase would be used by the Alaska Native community instead of the word "subsistence." The use of the word "subsistence" has become one of limited perception and perhaps has negative connotation in the taking of food from the local environment, and does not adequately reflect the true sense of its cultural bases.

We are including a list of words and phrases that all describe parts of our way of life not encompassed by the word subsistence. We hope that you can find an indigenous word or phrase. Such a word or phrase could then be presented to the AFN convention for adoption.

- > Way of life
- > Unity - circle of interaction
- > Survival
- > Recreation
- > Camaraderie, comradeship, companionship, and community
- > Spirituality
- > Sense of pride
- > Sense of well-being

- > Source of nutrition
- > Sense of accomplishment
- > Sense of family strength
- > Self-determination
- > Holistic
- > Connectedness
- > Interdependence
- > Traditional continuity from time immemorial to today
- > Sharing
- > Culture
- > Respect for all it brings
- > Conservation and stewardship
- > System for young people to learn
- > Enjoying land inheritance
- > Embodiment of beliefs, practices, and customs since time immemorial
- > Protection of land
- > Basic International Human Right to maintain one's lifestyle
- > Cultural heritage
- > Connection between old and young
- > Source of family unity
- > Source of security
- > Source of song, dance, and story telling
- > Our way of government and laws
- > Our birthright
- > Process of moving young into inheritance (rite of passage)
- > Barter, sharing, exchange, and trading for family, community, regional, and inter-regional
- > Source of learning values
- > Way to get specific knowledge about Creation
- > Process of transmitting values
- > Process and system which reflect the inter-connectedness of everything and how it affects our culture, considering seasons and special times traditionally set aside for hunting, fishing, berry-picking, etc.
- > Celebration of life, liberty and happiness
- > Adaptability and versatility
- > Sustainability and balance, living in peace and harmony with all Creation
- > A wholesome way of life
- > It is a wholesome way of life, guided by customs and traditions given to us from the beginning of time of our people. It is the very roots of our existence.

Our group identified some words as a first attempt.

Aleut — toomin on gre ta son — Those things that keep us alive.

Tlingit — sh xha da yuk da utk — Working for the things that will be in and around your mouth.
— ha koos tee ee — Our way of life.

Gwich'in — t'ediraa'in — Striving to live off the land.

Inupiaq — Inuuniatqaut — Striving to live as a people.
— Inuuniatqaut — The way we live as a people.

Yup'ik — angussaaq — Concept for survival
— yuungnaqsaraq — Our way of being

Siberian Yup'ik — key.yaq tak tak — Way of life

We also discussed the word "resource." It has become a reference to a thing and no longer holds the respect of making use of a living part of Creation. Again we attempted to describe in English what we knew was a much larger definition of "resource."

- Food
- Sustenance
- Clothing
- Spirit
- Peace of mind
- Therapy
- Our home
- Gifts from the Creator
- Harvest
- Security
- Our being - we are one with the land and sea
- Creation, which is wise and teaches its relatives that all should be respected
- All is equal

Everything is alive and breathing, made by the Creator and is to be respected and treated as such. If we do not treat those Creations properly and with respect, the abuse will affect our mind, body, and spirit, as well as all Creation.

It is clear that we struggled with the limits of English in portraying our understanding of the relationships we have with Creation and the importance of that connectedness with our way of life. Our efforts to find better words were limited. However, these are only starting points from which your larger and more knowledgeable group can go forward.

We thank you for your consideration of this request. We will offer whatever assistance we can during the AFN meetings for a better understanding of this aspect of our cultures.

Sincerely,
(for all the participants of the workshop)

Larry Merculieff
Co-Chair

Dr. Walter Soboleff
Co-Chair

SITKA TRIBE OF ALASKA - Tribal Government for Sitka, Alaska 456 Katlian Street Sitka, Alaska 99835

Tribal Resolution 95-36

Supporting nomination of passage routes to The National Register of Historic Places.

WHEREAS: Sitka Tribe of Alaska (hereinafter referred to as STA) is the federally recognized Indian Tribe for Sitka, Alaska and environs, chartered by the Secretary of the Interior in 1938 under the Indian Reorganization Act of 1934; and

WHEREAS: a priority of STA is to represent the best interests of the Tribe and its citizens in the area of cultural and historic preservation which includes, but is not limited to, the responsibilities and authorities which accrue to STA under the National Historic Preservation Act, the Archeological Resources Protection Act, the Native American Religious Freedom Act, and the Native American Graves Protection and Repatriation Act; and

WHEREAS: for some years, members of this Tribe have been working to identify the routes taken by the Sitka Tlingit People when they removed themselves from Sitka proper, following battle with the Russians at Indian River in 1804; and

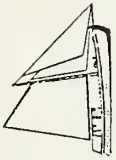
WHEREAS: the 1804 battle at Indian River is an event of major importance in the history of the Sitka Tlingit People, the Russian period in Alaska, and therefore, the history of Alaska; and

WHEREAS: passage over the routes taken required great determination, strength and ingenuity to traverse due to the almost impassible terrain involved; and

WHEREAS: these routes led to strategic locations from which the Sitka Tlingit People could both sustain themselves and still defend traditional hunting and fishing areas, thus denying their use to the Russians; and

WHEREAS: these routes constitute the last physical trace of that event and through study can reveal how the Sitka Tlingit People provided themselves with food, shelter and other necessities for survival during that perilous journey; and

WHEREAS: STA and the U.S. Forest Service, Chatham Area have in place a Memorandum of Understanding under which ongoing consultative and cooperative activities relating to the protection of historic resources occurs, including this issue;



SOUTHEAST ALASKA OCEAN ADVENTURES
P.O. Box 6384 Sitka Alaska 99835 (907) 747 - 5011

OCT 13, 1995

DEAR SIR:

AS THE OWNER OF A RECREATIONAL / TOURISM
BUSINESS OPERATING IN AND AROUND COASTAL
SOUTHEAST ALASKA AND AS A 25 YEAR
RESIDENT OF BARANOF ISLAND AND FINALLY
AS A COMMERCIAL FISHERMAN IN ALASKAN
WATERS; I WOULD MAKE THE FOLLOWING
COMMENTS ON THE U.W. BARANOF TIMBER
SALE PROPOSAL:

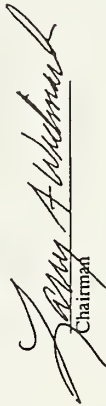
- 1- WITH ONE-HALF (1/2) THE VOTERS IN
THE REBUT ELECTION IN SITKA
EXPRESSING A POSITION AGAINST
CLEARCUT TIMBER HARVEST IN THE
SITKA LOCAL USE AREA...
- 2- WITH THE MANY OF THE SAME VOTERS
BEING IN FAVOR OF A SUSTAINABLE
WOOD PRODUCTS INDUSTRY IN SITKA...

NOW THEREFORE BE IT RESOLVED: that the Tribal Council of Sitka Tribe of Alaska hereby urges that the routes utilized by the Sitka Tlingit People, as described above, be determined eligible for nomination for inclusion on the National Register of Historic Places; and


BE IT FURTHER RESOLVED: that these routes be known as the Sitka Kiksadi Survival March Route.

CERTIFICATION

The foregoing resolution was adopted at a duly called and convened meeting of the Tribal Council of the Sitka Tribe of Alaska held on September 20, 1995 at which a quorum was present, by a vote of 7 IN FAVOR, 0 AGAINST, and 2 ABSENT.


Chairman

Attest:


Secretary

3- WITH TOURISM BECOMING A MUCH MORE
VITAL AND INCOME GENERATING
FACTOR IN THE SITKA ECONOMY...

HOW IS IT THAT THE FOREST SERVICE
CAN PROPOSE TO SELL TIMBER IN
THE SITKA AREA TO KRC. THUS
REMOVING THE VERY BASE FOR A
LOCAL WOOD PRODUCTS INDUSTRY AND
DUGMUNG THE RECREATION AND
TOURISM INDUSTRIES FOR THE SITKA
AREA?

I URGE THE USFS TO ADOPT
ALTERNATIVE 5 FOR THE N.W.
PARADE SQUARE!

SINCERELY:

WOEL VUHOSON
1705 SAWMILL CR. RD
SITKA AK 99835



MESSAGE DISPLAY FOR BRENDA DICK

To /phg
CC J.Franzel
CC BD

From: James M. Thomas
Postmark: September 13, 1995 3:11 PM Delivered: September 13, 1995 3:11 PM
Status: Previously read
Subject: Forwarded: Phone message from MIKE SVENSON

Comments:
From: James M. Thomas:R10F03A
Date: September 13, 1995 3:11 PM
I just wanted to share a supportive discussion I had with Mike. He
is a member of the Southeast Selnara' Association, and he wanted us
to be aware that although some members of the public represent
themselves as fishers, or as representative of fishing interests,
they do not do so. The fact that the selners do not comment on our
proposal, is related to the fact that there primary concern was
stream buffers and that they have no concerns about our timber sale.
He basically wanted us to realize that the environmentalists do not
speak for the fishers. JT
It was nice to hear someone support what we are doing. JT

10/3

Northwest Baranof Draft Environmental Impact Statement

Comment Form

The USDA Forest Service is obtaining public comments on the Northwest Baranof Draft Environmental Impact Statement. You may use as many of these forms as necessary to provide written comments on the draft EIS. Please deliver or mail it to the Forest Service. The Comment Period has been extended. Comments will now be accepted until 5 PM on October 16, 1995.

I am very impressed with the intensity of effort, personnel and scope - that went into this EIS. I am not impressed with the preferred alternative (2). For survey purposes, my first choice is Alt 5. My second choice, if the effects of public pressure fail to change the current BMP to one of realistic sustainability is Alt 3.

In the first impact survey of this project I objected to any unit selection VCU 302, especially within the peninsular south and east of Sitka. In 30 years of hunting/hiking I have experienced few other areas that are more consistently populated with as high a density of deer - especially does with fawns, and yearlings. It would be inappropriate in the company of scientists to call this area a "nursery" but it seems to have the quality habitat that make it a very productive feeder system to the area's deer population. If you take that which carries out of the area it will weaken the resilience of the project area and its adjacent areas across from neighboring VCU 300 is a 75 year old clearcut I have and will continue to encourage anyone who is concerned with stewardship to visit this monument to the future.

The BMP for sustained forest economics is science, not politics. The successful cycles of true multiple use for this forest should have been based on a minimum of 150 years. In terms of economics we are now operating in a deficit.

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Signaka Way
Sitka, Alaska 99835

Sincerely
John C. Vallie
Box 1875
Sitka

OCT 13 1995

SITKA BARANOF DISTRICT
FOREST SERVICE SITKA AK

Northwest Baranof Draft Environmental Impact Statement

Comment Form

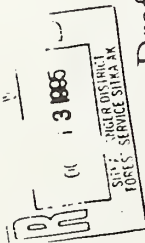
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I suggest Alternatives # 5 (No Action)

Ann Vallie

1721 Edgemoor Dr.
Sitka AK 99835
747-3732

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Signaka Way
Sitka, Alaska 99835



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I support alternative #5
(No Action)

Roger Vallian
1721 Edgecombe Dr.
Sitka Alaska 99835

Roger Vallian

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Signaka Way
Sitka, Alaska 99835

Northwest Baranof Draft Environmental Impact Statement

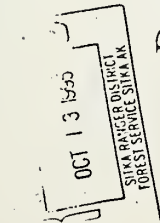
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I support alternative 5 (no action) because I think
Sitka's economy cannot afford more clearcutting
on Northwest Baranof. It severely damages Sitka's
sources of income: fisheries, hunting, tourism
and subsistence. Besides that I am of the opinion that
the remaining old growth forest must remain
where it is as a unique world monument. It is
Sitka's treasure.

Martina Kurzer
P.O. Box 6001
Sitka, AK, 99835

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Signaka Way
Sitka, Alaska 99835



Northwest Baranof Draft Environmental Impact Statement

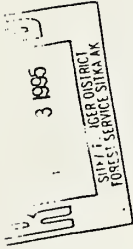
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I support Alternative 5, the no action
alternative. I would like the forest
lands left for 10 generations ahead
at least

[Signature]
Herman Whittemore
Box 20204
Sitka, Alaska 99835

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Signaka Way
Sitka, Alaska 99835



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[Signature]
I support alternative 5
for no action alternative
Box 6443
Sitka, Alaska 99835 10/13/95

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Signaka Way
Sitka, Alaska 99835



067 | 3 1995

SITKA RANGER DISTRICT
FOREST SERVICE SITKA, AK

Northwest Baranof
Draft Environmental Impact Statement

Comment Form

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I support Alternative 5, the No-Action alternative.

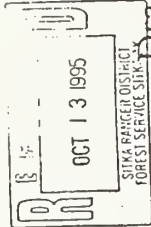
The letter and her enclosed
express your indebtedness to me.

I feel that paying of Bonds
and will cause to get any other
and pay some more.

Old growth forest is disappearing
a portion remains and mostly is
left alone. Some are old growth is
disappeared with some paper shreds
in the forest and other materials.
We are cut through the forest no more.

Charles E. Gutzler
205 E. 10th
Chicago, Ill.

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Siginaka Way
Sitka, Alaska 99835



067 | 3 1995

SITKA RANGER DISTRICT
FOREST SERVICE SITKA, AK

Northwest Baranof
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I support alternative 5 which protects the sensitive resource around the Sinks. All the other alternatives would be too harmful to subsistence hunting and fishing around Sinks.

19. 1. 276

Po Box 6038

SITE ALK 99835

10-13-95

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Jim Thomas
204 Siginaka Way
Sitka, Alaska 99835

Wildwatch Consulting
212 A Peterson St
Sitka, AK 99835

Attn: Jim Thomas
USDA Forest Service
Northwest Baranof Planning Team
204 Siginaka Way
Sitka, AK 99835

15 October 1995

Dear Mr. Thomas:

Thank you for accepting public comments on the proposed Northwest Baranof Timber Sale. Although I have made verbal comments at both subsistence hearings, I wanted to add written comments. I had planned on providing written comments in detail. However, time allows me only to present a summary here. Details will have to wait for later. Even if this means that details are not included in the final EIS, they may help you team prepare the EIS for this and other timber sales.

In my opinion, as a professional consulting ecologist, based on decades of field experience and university training through PhD and PostDoc, is that this DEIS does not provide enough information for a rational person to evaluate the magnitude or kinds of impacts -- to the ecosystem or to subsistence opportunities -- which might be expected from the planned timber harvest. Consequently, any preference a person might have for one cutting alternative, over another, except the no-cut alternative, has to be based on guesswork. This does not meet either the intent or the letter of the law.

LEGAL ISSUES NEPA and CEQ

The purpose of NEPA is, of course, to assure "better decisions." This DEIS does not consider a wide enough range of alternatives in terms of cutting methods (e.g., clearcut vs. selective cut); and it does not consider a wide enough range of possible geographic relationships among new cuts or between them and old cut sites. Nor does it provide enough information on impacts by the alternatives it does consider.

As you are aware, Council of Environmental Quality regulations for NEPA stipulate that "NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken."

For example, regulations stipulate that preparation of an EIS should "utilize a systematic interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and decision making." An EIS should also "identify environmental effects and values in adequate detail so that they can be compared to economic and

technical analyses."

"The primary purpose of an environmental impact statement is to serve as an action-forcing device to insure that the policies and goals defined in the Act are infused into the ongoing programs and actions of the Federal Government. It shall provide full and fair discussion of significant environmental impacts and shall inform decision makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment."

This DEIS fails these tests. It does not "provide full and fair discussion of significant environmental impacts." Therefore, it does not adequately "inform decision makers and the public." It does not consider a sufficiently broad range of alternatives to address those which would "avoid or minimize adverse impacts."

CEQ regulations also stipulate that EISs "shall be supported by evidence that the agency has made the necessary environmental analyses." Analyses of impacts on wildlife necessary to determine their kinds and extent and thus effects on subsistence opportunities have not been made.

Furthermore, in the Alternatives section of the DEIS, agencies shall "Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated." Again, there is negligible consideration of reasonable alternatives which do not produce or enlarge already large clearcuts.

ANILCA

Although I do not have the require at hand to cite, there is, I believe, a section of ANILCA which requires that impacts to subsistence use be minimized, and that potential impacts be fully revealed. That is not done in this DEIS.

SCIENTIFIC ISSUES Habitat Capability Indices

The HCI approach bases habitat typing on characteristics of the vegetation and landscape which have not been shown to have a high correlation with carrying capacity / capability of the habitat to support deer, bear and other wildlife. Indeed, there is much reason to believe that said correlation is quite low. For within a given HCI class, actual ability to support wildlife varies widely. Furthermore, even were HCI to be well correlated with carrying capacity, it would represent a cap on wildlife abundance (Fig. 1).

Given that population size varies up and down under any cap, one cannot easily predict population sizes before or after lowering a cap (Fig. 2). But, a range of probabilities could potentially be provided: e.g., 90% chance during any given year that population

170
K-95

size is within say 15% of the cap. Then one would ask how these probabilities are altered by lowering the cap.

If a population size varies greatly, lowering the cap may markedly increase probability of the population occasionally declining so far that it is vulnerable to extirpation by natural stressors and/or other human impacts -- even if the range of variation remains the same (e.g., ± 100 animals above and below the mean size).

Indeed, the range of variation may not remain the same. It is a common principle of population dynamics that lowering carrying capacity tends to cause a wave of perturbation through the population, at least temporarily increasing its range of variation, and markedly increasing the probability that size will shrink so much that extirpation is much more likely. (Figs 3 and 4).

Sincerely,

Stephen F. Stringham, PhD
President

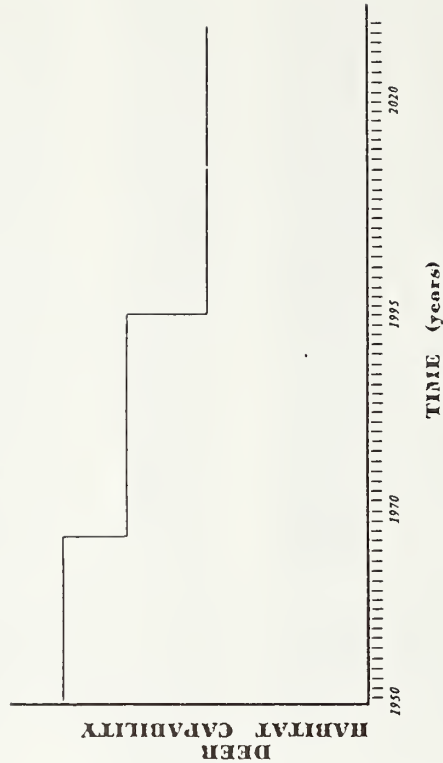


Fig. 1. Changes in habitat capability over time as a result of clearcutting (*hypothetical*).

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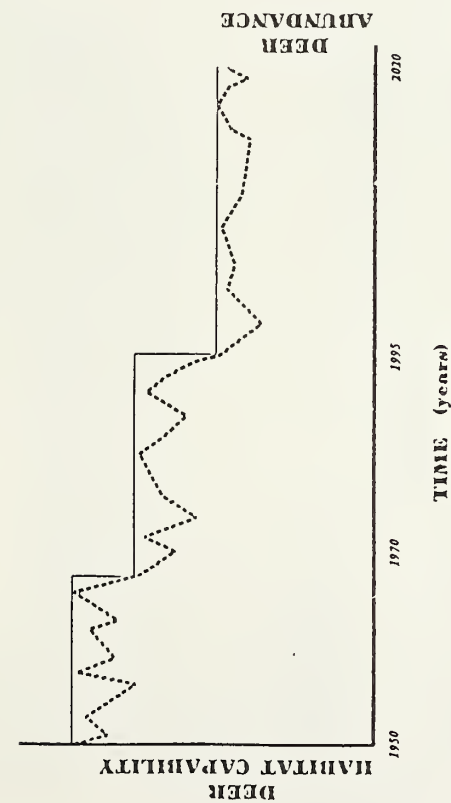


FIG. 2. Supposed pattern of fluctuations over time in deer population size beneath the ceiling of habitat capacity (hypothetical). Lowering habitat capacity supposedly just lowers the ceiling to deer population size, but does not otherwise affect the pattern of fluctuation in deer population size.

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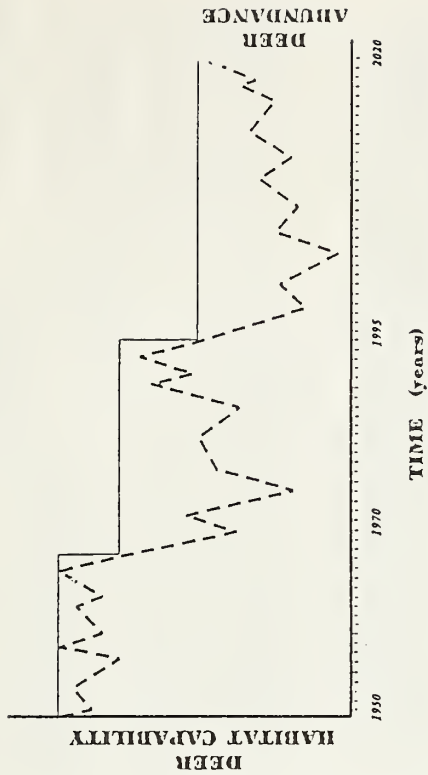


FIG. 3. A more realistic scenario for responses by deer population size to decreases in habitat capacity (hypothetical). Declines in population size are initially much greater than declines in habitat capacity; populations may or may not recover toward the new habitat carrying capacity before capacity is lowered again, threatening the herd once again.

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P. O. Box 671
Sitka, Alaska 99835

October 12, 1995

Mr. Gary Morrison
Forest Supervisor
USFS - Chatham Area
204 Signakka Way
Sitka, AK 99835

Dear Gary:

Following are comments on the NW Baranof EIS:

No alternative that is selected should include partial cutting, selective cutting or any other new untested silvicultural system. The Hanus ATC sale designed to test alternatives to clearcutting has yet to be sold due to environmental lawsuits. Until the "alternatives to clearcutting" have been tested both economically and silviculturally they should not be used as standard methods of timber harvest.

The silvicultural desirability of selective logging will not be known until the test has determined what the second growth stand will look like. There is strong evidence in areas throughout the Tongass where selective logging has been practiced (fish trap logging) and the results are very unsatisfactory. There is little, if any, young growth and the residual hemlock was not showing any appreciable growth. The stands appeared to be all but stagnate low-quality hemlock. The extensive use of helicopter logging needs to be done cautiously until it is determined whether the seed bed will be prepared so that we will continue to have the vigorous second growth we are now experiencing with cable logging.

The economics of these new systems are questionable. Careful economic evaluation needs to be made on a continuous basis so that it can be determined at what market level and how much infrastructure can be supported with these methods. This is particularly important when helicopter logging is employed.

The proposed alternative is poor because there are too many expensive log dumps and infrastructure associated with the six different locations. Concentrating the volume in one or two areas will help the economics.

Why has the draft EIS reduced the scoping volume of 120+ MMBF to the current alternatives ranging from 35-60 MMBF? This will serve to double the cost of the EIS for

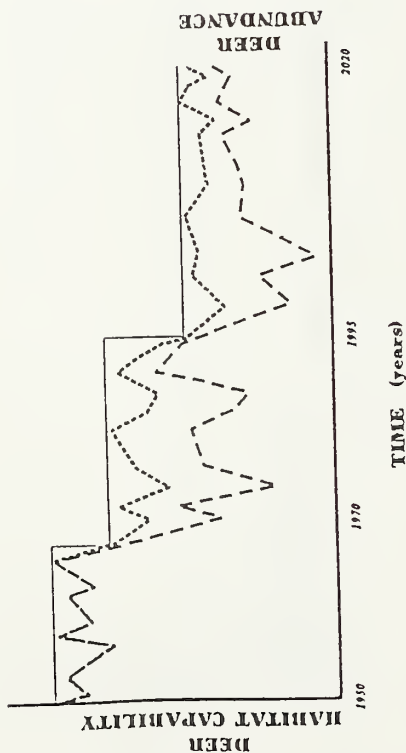


FIG. 4. Comparison of responses predicted by government agencies vs. a more realistic expectation. (Hypothetical).

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

Ref: 95-060-AFS

OCT 15 1995

REPLY TO
ATTN OF:

WD-126

James M. Thomas, Team Leader
Tongass National Forest, Chatham Area
Sitka Ranger District
204 Signaka Way
Sitka, Alaska 99835

Dear Mr. Thomas:

In accordance with our responsibilities under the National Environmental Policy Act and Section 309 of the Clean Air Act, we have reviewed the Northwest Baranof Timber Sale(s), Draft Environmental Impact Statement (draft EIS). The draft EIS analyzes four (4) action alternatives to harvest between 35 to 67 million board feet (MMBF) of timber from about 1,725 to 3,263 acres of Baranof Island, north of Sitka, Alaska.

Based on our review, we have rated the draft EIS EO-2 (Environmental Objections - Insufficient Information). Our objections are based on water quality concerns with impacts to impaired waters, protection of riparian areas in Class III or first and second order (headwater intermittent and perennial) streams, and water quality issues with bark accumulation at proposed log transfer facilities (LTF's) together with unsuitability of several of the proposed LTF's. Additional information is needed on effects to degraded waters, effects of timber harvest and road construction, incorporation of Fish and Wildlife Service dive survey information for LTF sites, and the effects of logging camp and LTF removal. This rating and a summary of our comments will be published in the *Federal Register*. The enclosure provides additional comments and details.

Thank you for the opportunity to review this draft EIS. Please contact Mark Jen at (907) 586-7619 if you have any questions about our comments.

Sincerely,

Richard B. Parkin, Manager
Geographic Implementation Unit

Enclosure

cc: USFWS, NMFS, ADEC, ADNR, ADGC - Juneau, ADFG - Douglas

Mr. Gary Morrison
October 12, 1995
Page 2

this area. Will there be future timber sale opportunities from the EIS or will there need to be other EISs to remove timber from this area if more sales are to occur in the future?

Alternative 4 should be selected as the final preferred alternative. This alternative is the one that comes closest to meeting the multiple use goals of the current TLM.

Thank you.

Sincerely,

George S. Woodbury

WATER QUALITY

The draft EIS provides a general discussion of sedimentation impacts from timber harvest and road construction (page 4-15). As part of the NEPA requirement, the final EIS should assess and evaluate the site-specific effects of timber harvesting and road construction on other water quality criteria, such as temperature, turbidity, dissolved oxygen, water chemistry, bacteria, etc., to ensure compliance with the Alaska Water Quality Standards (18 AAC 70.020). The draft EIS indicates that BMPs and TTRA buffer strips should minimize sediment delivery for all action alternatives (page 4-18). It is the Forest Service's responsibility to demonstrate, in advance, that timber harvest and road construction will not cause beneficial use impairment and cause standard exceedances.

Road Construction/Maintenance/Closure

The draft EIS does not adequately evaluate the impacts from road construction to water quality and fish habitat. New road construction, grading of cuts and fills, ditching, and installation of culverts exposes soil to erosional forces. Proper maintenance/closure of roads after construction is essential to ensure that the sediment standard is not exceeded. The final EIS should ensure that proper maintenance of new and existing roads are conducted during the life of this project. If adequate funds and resources are not available to maintain roads for the life of this project, they should be closed in accordance with State and Federal requirements and standards.

Culvert and bridge failures have occurred along the roads in several value comparison units (VCUs) resulting in sedimentation (e.g., Nakwasina River, Fish Bay, Adams Creek). The final EIS should include additional measures to ensure that culvert and bridge failures do not occur and that corrective actions are made immediately to minimize impacts to water quality and fish habitat.

The draft EIS indicates that streams encountered during road construction are crossed by culverts and bridges (page 2-13). We (USFS) use bridges where "large volumes" of water are anticipated. Culverts are used to cross "small drainages" and to provide relief drainage under the road as necessary. We are uncertain what constitutes "large volumes" and "small volumes." Can this be quantified based on flow rate? Or stream class? This terminology should be clarified in the final EIS.

Table 2-2 provides a proposed construction of roads across class I and II streams by alternative (page 2-13). However, the table, appendices, and the text do not indicate what type of in-water crossing structure, culvert or bridge, is proposed. The final EIS should provide the following additional information:

(1) Stream crossing structures

- design or type of crossing structure: culvert or bridge
- culvert size (length, diameter) and gradient/slope of culvert placements
- bridge size and placement of abutments in relation to streambank

(2) On site stream characteristics

- peak flow analysis documenting fish passage standards will be met

(3) Site specific location of stream crossings and instream activities

(4) Types of equipment to be used in stream.

(5) Mitigation measures

- In-water timing window to avoid conflicts and impacts to fish migration and spawning.
- fluming, diversions, siltation fences, etc

This information should also be included to Appendix H, Road Cards.

Helicopter yarding has been established as a viable alternative yarding system on the Chatham Area (page 4-37). Logs are lifted off the ground and flown to landings. This yarding system causes the least amount of impact to the soil and minimizes road construction, but has the highest yarding cost. Table 4-22 provides a comparison of proposed harvest systems by alternative using skyline versus helicopter (page 4-37).

Helicopter yarding is proposed for 49 percent to 69 percent of harvest acres. The final EIS should reevaluate the need for additional new roads and LTFs.

Riparian Protection Areas

A recent U.S. Forest Service report concluded that current practices for timber harvest planning and application are not fully effective in protecting anadromous fish habitats on the Tongass National Forest.¹ Most Class III streams are not currently being buffered to prevent negative effects of timber harvest and roads, such as loss of woody debris and changes in energy sources and nutrients, that can degrade downstream fish habitats. The report recommended that increased headwater protection from timber harvest are very important protective measures that are needed.

The National Forest Management Act (NFMA) requires that riparian areas be established to protect water quality and fisheries habitat. The Tongass Timber Reform Act (TTRA) requires a minimum 100-ft buffer from Class I and II streams. From reviewing the draft EIS, it is not clear what riparian protection, if any, will be maintained for Class III streams. We are concerned that water quality standards will not be met and beneficial uses may not be protected because the draft EIS provide little, if any, protection for Class

III or first and second order (headwater intermittent and perennial) streams. The final EIS needs to include full protection of first and second order streams.

These first and second order streams are important in maintaining downstream system integrity and water quality as well as providing fisheries habitat. Disturbed first and second order streams may become sediment sources to downstream areas. In addition, loss of woody vegetation along these headwater streams may eventually lead to reduced large woody debris in downstream reaches. The greatest opportunity for maintaining stream conditions through BMPs may be on first and second order streams. Therefore, the EPA strongly recommends that adequate riparian protection be provided for first and second order streams to minimize downstream impacts to water quality and aquatic habitat. This may be especially important for Rodman Creek and the Nakwasina River as are listed on the EPA's Impaired Watershed List due primarily to riparian zone timber harvest which occurred in the past.

In the Project Area, there are several Class I streams that either flow into or out of Class I lakes. The TTRA and the Forest Service Standards and Guidelines require the retention of 100-ft minimum width buffer areas along lakes such as this. The draft EIS does not indicate whether riparian buffers areas will be retained around lakes and ponds. The EPA recommends that all lakes and ponds deserve riparian buffer protection to minimize impacts to water quality and aquatic habitat. The final EIS should provide a thorough discussion of buffer protection for lakes and ponds. Riparian buffer areas around lakes and ponds should be depicted in Appendix G and H.

Best Management Practices

The draft EIS indicates that both the Tongass Timber Reform Act and the Tongass Land Management Plan require that Best Management Practices (BMPs) be used to prevent degradation of streams during road construction (page 2-13). Each prescribed BMP is depicted in the text and Appendices by a number based on the Soil and Water Conservation Handbook (FSH 2509.22) and the Aquatic Habitat Management Handbook (FSH 2609.24). The average reader should not be expected to know the BMP description associated with each BMP number. A description of each BMP should be included to an Appendix in the final EIS.

LOG TRANSFER FACILITIES

The draft EIS considers a total of 10 log transfer facility (LTF) sites, incorporating three (3) types of LTFs: low-angle slide, low-angle ramp, and barge (page 2-19). Five (5) of the LTF sites were used in previous harvests, located at Nakwasina Sound (Noxon Creek and Lisa Creek), St. John Baptist Bay, Rodman Bay, and Appleton Cove. The five (5) newly proposed LTF sites include NE Rodman Bay, Schultz Cove, South St. John Baptist Bay, Nakwasina Passage, and NW Lisa Creek. The draft EIS fails to provide a site-specific description of the amount and extent of bark accumulation at the existing LTF sites. The

impacts to the marine environment may be significant and require further evaluation in the final EIS.

Appendix A includes the dive surveys of LTF sites conducted in the project area on September 1994. The survey provides a general description of the underwater environment of seven (7) LTF sites, including Rodman Bay, Schultz Cove, St. John Baptist Bay, Noxon Creek, Nakwasina Passage, Lisa Creek, and Northeast Rodman Bay. These surveys do not include site specific bark accumulation information. In 1990, the U.S. Fish and Wildlife Service (USFWS) conducted a dive survey for the Kelp Bay project.² In 1994, the USFWS conducted a field investigation of LTF sites on Baranof Island.³ The final EIS should incorporate the results of these USFWS reports.

The Tongass Land Management Plan Revision Supplement to the draft EIS (August 1991) outlines the U.S. Forest Service's goal to operate Log Transfer Facilities (LTFs) in areas which will "best avoid or minimize potential impacts on water quality, aquatic habitat and other resources. ... The USDA Forest Service has adopted the 'Log Transfer Facility Siting, Construction, Operation, and Monitoring/Reporting Guidelines' developed by the Alaska Timber Force." The Alaska Timber Task Force (ATTF) guidelines were developed by private, public, and resource agency personnel to delineate methods to minimize adverse environmental impacts of log transfer facilities. The guidelines stress that facility siting is the most effective means of reducing the adverse effects associated with log transfer facilities.

Previously Used LTF Sites

The draft EIS presents information on bark coverage at previously used LTF sites based on a study by Schultz and Berg (1976) (Table 3-28; page 3-69). In addition, Table 4-6 provides LTF estimated direct effects to the estuarine marine system (page 4-12). We are not certain how the estimates for bark impacts were obtained. More current, site specific bark accumulation data should be obtained and included in the final EIS.

The final EIS should present site-specific bark accumulation information at the five (5) previously used LTF sites, located at Nakwasina Sound (Noxon Creek and Lisa Creek), St. John Baptist Bay, Rodman Bay, and Appleton Cove. This information is needed to determine whether accumulation of bark from the continued use of the LTFs at these sites may result in a direct and cumulative impact on the marine environment. This information should include the areal extent and outer boundary of bark accumulation, estimate of the thickness and percent cover of bark debris. The consideration of other alternatives to log transfer or alternatives to log transfer sites may be warranted.

New LTF Sites

Five (5) new LTF sites are proposed, including NE Rodman Bay, Schultz Cove, South St. John Baptist Bay, Nakwasina Passage, and NW Lisa Creek. The draft EIS and the USFWS reports include a description of these sites.

NE Rodman Bay

This area was investigated as an alternative to the reconstruction of the Appleton Cove LTF for the U.S. Forest Service (USFS), Alaska Pulp Corporation Long Term Timber Sale Contract, Kelp Bay. The USFWS approved this site as an alternative to Appleton Cove. This site was not approved as an addition to a facility in Appleton Cove. However, this site was rejected by the USDA Forest Service during the NEPA process and reconstruction of the LTF in Appleton Cove was selected. A barging facility for small barges now exists in Appleton Cove. Since the Bay is less than two miles, constructing a new facility at this location in Rodman Bay seems unnecessary. In addition, the draft EIS indicates that this site does not meet the ATTF guidelines for safe access to a facility from the uplands and safe marine access to facilities (Appendix E). Therefore, we recommend that this site not be used for a LTF.

Schulze Cove

According to the USFWS (1994), this site has been used previously as a log storage area. The substrate along the transect consists of pebble in the high intertidal to 40 meters from MHW, changing to sand at 60 meters, after which the substrate was covered with a layer of woody debris. Three species of algae were noted in very sparse concentrations. A patchy 5-meter wide band of stunted eelgrass occurred between 40-45 meters. Twelve different invertebrate species were noted along the transect. The draft EIS indicates that this site does not meet ATTF guidelines for bark dispersal due to inadequate depth (< 40 feet) and poor flushing action (Appendix E). Therefore, we recommend consideration of other log transfer sites in Fish Bay or alternatives such as direct land to barge transfer of logs at this site.

South St John Baptist

This is the only bay in Southeast Alaska in which large numbers of sablefish are found year after year (page 2-29). The old LTF is proposed to be converted to a barging facility using a loader or stacker to place logs directly onto a barge (page 2-20). Since harvested timber would not be placed directly into the water, the impacts to the aquatic resources at this site would be minimized. The EPA supports the use of a barge-loading log transfer facility. We recommend that all LTF sites in the Project Area consider the direct land to barge transfer of logs to minimize impacts to the marine environment.

Nakwasina Passage

The USFWS survey indicated that the substrate along the transect consists of boulders from MHW to 20 meters, grading into gravel/cobble to 35 meters. Twenty one different species of invertebrates were noted, however, numbers of individual species were low as were the two commercially important species, *Parastichopus californicus* and *Cancer magister*. This site does not meet the ATTF guideline for depth (< 40 feet). Therefore, we recommend consideration of (1) using other nearby LTF sites at Noxon Creek or St. John Baptist Bay, (2) helicopter insertion log transfer to the Nakwasina site, and/or (3) direct land to barge transfer of logs at this site.

NW Lisa Creek (Nakwasina Sound)

This site was previously used as a log storage area. The substrate was covered with bark, logs, branches, twigs, and other woody debris from 40 meters to 65 meters along the transect (USFWS 1994). Since the area has accumulated bark, we recommend that the use of other nearby LTF sites be considered. The Noxon Creek and the Lisa Creek LTFs are within the Nakwasina Sound Area. Furthermore, a proposed helicopter insertion log transfer site (HLTS) is located approximately two (2) miles from this site.

In general, the EPA supports an alternative to log transfer which would avoid or minimize the direct, indirect, and cumulative impacts to the marine environment. The direct land to barge transfer of logs, proposed for the Appleton Cove and St. John Baptist Bay sites, would avoid and minimize the adverse impacts of bark discharge, shading, and compaction associated with log transfer, rafting, and storage. To the extent practicable, we recommend that existing and proposed LTF sites in the Project Area consider barging facilities as an alternative to in water transfer of logs.

Potential Impacts to the Marine Environment

The most significant problem associated with water storage of logs appears to be bark loss. The adverse impacts of wood waste deposits on the aquatic ecosystem are well documented, and include smothering of organisms and chemical changes caused by leaching and decomposition of the waste.^{8,9,7} Deposits over 3 cm deep result in measurable changes in the benthic community.⁸ Bark and woody debris decay slowly and may remain for decades.⁹ The EPA disagrees with the statement that little quantified information is available that documents decomposition, flushing, or other information about the longevity of bark and its effects on the marine benthic habitat (page 4-30).

The potential impacts of the existing and proposed LTFs to the estuarine and marine environment in the Project Area are inadequately documented and evaluated. The draft EIS indicates that the Project Area may be important for sablefish (St. John Baptist Bay), herring, and shellfish (page 3-29). In addition, there may be critical sea lion haulout areas. These critical habitat areas should be thoroughly documented in the final EIS and located on project maps. Kelp and eelgrass beds are important herring spawning areas. A thorough discussion and identification of these areas should also be included.

The draft EIS indicates that bark accumulation and the area under the embankment of an LTF generally eliminates less than one percent of the habitat area of their prey species based on the size of estuary and the regional average of bark accumulation of 1.96 (Faris and Vaughn 1985). The EPA cautions applying this 1.96-acre value to predict impacts of bark accumulation for all LTF sites. The data were obtained from LTF sites ranging from those having recent usage to those not actively used for many years. The amount and location of bottom that is covered by bark may be affected by currents, deposits of silt, changes in the log transfer operation, and other factors. Site specific information on bark accumulation at the LTF sites is needed to determine the impacts of bark deposition for each action alternative. Therefore, we recommend that the final EIS

incorporate site specific bark accumulation data. The assumption that the average disturbance area for each LTF site is 1.96 acres should not be used in the final EIS.

Existing Federal and State Regulations

The Environmental Protection Agency (EPA) considers bark to be a pollutant. The discharge of bark and other woody debris from log transfer into marine waters constitute a point source discharge, and therefore, requires a National Pollutant Discharge Elimination System (NPDES) permit pursuant to Section 402 of the Clean Water Act (CWA). The NPDES permit is based on state water quality standards and/or effluent standards promulgated by EPA under the CWA. Since there are no effluent standards for LTFs, NPDES permits are based on EPA's best professional judgement. Permit conditions rely on Best Management Practices (BMPs) and Monitoring procedures outlined by the Alaska Timber Task Force (ATTF).

The Corps of Engineers also regulates construction of log transfer facilities through Section 404 of the CWA. A Section 404 permit is required for the discharge of dredged or fill material into waters of the United States.

The State of Alaska, Department of Environmental Conservation, must certify that any permitted discharge of pollutants into waters of the United States is consistent with the Alaska State Water Quality Standards. The state typically authorizes bark accumulation on the bottom of marine waters not to exceed a Zone of Deposit of one (1) acre (18 AAC 70.033).

Best Management Practices and Monitoring

The achievement of Water Quality Standards for nonpoint source activities occurs through the implementation of Best Management Practices (BMP's) designed to protect Water Quality Standards and beneficial uses. The final EIS should provide a description of BMPs to minimize the discharge of bark, woody debris, and other pollutants from the LTFs. These BMPs could include the guidelines set forth by the Alaska Timber Task Force.

The final EIS should include a monitoring plan for each LTF site to ensure compliance with the ATTF Guidelines. The following should be included to the plan: (1) a bark accumulation monitoring program to estimate the area of bark coverage (acreage), determination of the outer boundary of the bark pile. The monitoring program should include sample measurements along permanent transect to determine aerial extent, thickness, and percent coverage of bark debris, and (2) daily monitoring for oil sheen based on visual observations.

LTF and Logging Camp Closure

The draft EIS indicates that logging camps and LTFs will be removed at the completion of logging activities (page 4-91). In Appendix A, a proposed implementation monitoring includes LTF removal. At this time, we are uncertain to what extent the structures associated with these activities will be removed. These developments occupy approximately five to 10 acres and include bunkhouses, mobile homes, fuel storage facilities, etc. (page 4-91). Will the ramps and slides associated with LTF activity be removed and the site rehabilitated? Will bark debris in marine waters at LTF sites be removed and disposed of properly? The final EIS should include a detailed discussion of how structures from these activities will be removed.

MONITORING

The rationale and strategy for monitoring in the Northwest Baranof project area needs to be consistent with the purpose of the project and the overall monitoring plan for the Chatham Area. The final EIS should indicate how monitoring for this project will be integrated with the overall monitoring plan. Monitoring is particularly important, because it provides a check on the predictions of effects for the action alternatives. It is important to evaluate the effectiveness of planned mitigation measures to protect potentially affected resources.

The Forest Plan recognizes three distinct types of monitoring: implementation, effectiveness, and validation. The draft EIS provides a general monitoring plan that includes implementation and effectiveness monitoring (Appendix A). The final EIS should also include a discussion of how validation monitoring will be conducted in the Northwest Baranof project area to determine whether the initial data, assumptions, relationships, and models used in revising the Forest Plan are correct, or if there is a better way to meet Forest Plan objectives.

The draft EIS states that measurable changes in stream temperature, dissolve oxygen, or stream nutrient cycles as a result of timber harvesting activities planned in Northwest Baranof watersheds are not expected (page 4-16). The final EIS should discuss how these characteristics will be monitored. A detailed monitoring plan would include types of surveys, location and frequency of sampling, parameters to be monitored, indicator species, budget, procedures for using data or results in plan implementation, and availability of results to interested and affected groups. A helpful document for developing water quality monitoring plans: *Monitoring Guidelines to Evaluate Effects of Forestry Activities on Streams in the Pacific Northwest and Alaska (EPA/910/9-31-001, May 1991)*.

The final EIS should also include a feedback mechanism which relies upon monitoring so that standards and guidelines, BMPs, standard operations, and timber sale administration are adjusted when effectiveness monitoring indicates a need. Providing such a process for adjustment will ensure that mitigation measures will improve in the future and that unforeseen effects are recognized and minimized.

SOLID WASTE MANAGEMENT

The dive survey for Rodman Bay indicated that old garbage, cable, engine blocks, and tires was noted on individual transect (Appendix E). The EPA has concerns with the disposal of solid waste into the marine environment, as it fails to comply with the Clean Water Act. In particular, old engine blocks may contain residues of oil and other petroleum products, which in significant quantities, may have a significant impact on water quality and aquatic habitat. The State Water Quality Standards establish criteria for residues to protect beneficial uses. The EPA strongly recommends that solid waste be properly disposed of on approved upland locations. The final EIS should discuss proper removal and disposal of solid waste (e.g., garbage, tires, engine blocks, slash, fuel storage tanks, etc) resulting from this timber sale.

FUEL STORAGE TANKS/FACILITIES

The draft EIS indicates that the development of certain facilities would include fuel storage facilities. Table 4-48 shows the estimated fuel consumption (millions of gallons), by alternative (page 4-94). Please be advise that the owners and/or operators of certain fuel storage facilities may need to comply with the Oil Pollution Prevention Regulation (40 CFR Part 112). The development and implementation of a Spill Prevention, Control and Countermeasure (SPCC) plan may be required. The existing regulations may apply to any owner and/or operator of a fuel storage facility for the following reasons:

- (1) The facility is non-transportation related.
- (2) Aboveground storage capacity of a single container is in excess of 660 gallons, or an aggregate aboveground storage capacity greater than 1,320 gallons.
- (3) The facility, due to its location, could reasonably be expected to discharge oil upon the navigable waters of the United States or adjoining shorelines.

The final EIS should include information on the size, volume, and location of fuel storage tank/facilities in order for our agency to determine whether the Oil Pollution Regulation apply to the facilities proposed for this timber sale.

AIR QUALITY

The draft EIS does not discuss any proposed prescribed burning. If prescribed burning is proposed the final EIS should identify potential sources of emissions from logging operations including mitigation to ensure that State Air Quality Standards will not be exceeded.

PAGE SPECIFIC COMMENTS

1-16	<p>The Purpose and Need section of the draft EIS identifies nine (9) issues: fish habitat and water quality, wildlife habitat and populations, old growth, marine environment, subsistence, recreation, scenic quality, economic and social quality, and heritage resources. The draft EIS provides a general discussion of these issues. However, it does not adequately evaluate or follow-up these issues. The Environmental Consequences section of the final EIS should provide a more thoughtful discussion of consequences of and mitigation proposed to address these issues, both at the broad project level, and at the site-specific level (unit and road cards).</p>
2-13	<p>The draft EIS indicates that all alternatives meet the requirements of the Clean Water Act. Based on our review of the limited information in the draft EIS, we are not convinced. The EPA recommends that further evaluation of water quality impacts be made and included to the final EIS.</p>
3-20	<p>The text states that Rodman Creek and Nakwasina River are listed on the EPA's Impaired Watershed List under the "Suspected" category, due primarily to riparian zone timber harvest which occurred in the past. The final EIS needs to include a specific specific accounting of how further degradation of these waters will be avoided.</p>
4-19	<p>The draft EIS states that many small, individually insignificant impacts can accumulate to subtle or significant impacts. What is meant by this? This needs to be explained fully in the final EIS.</p>
APPENDIX D	<p>Road Management Objectives (RMO)</p> <p>The RMO for each action alternative need further clarification. The public may not understand the meaning of each letter or word under the specific category. A legend may be necessary to clarify the intent of this section.</p>
G, H	<p>Unit Card (Harvest) and Road Cards</p> <p>Suggested changes to Unit and Road Cards:</p> <ul style="list-style-type: none"> For consistency, Sale area: 2 Duffield/Rodman map should use the same scale (200 ft contour intervals instead of 500 ft) as the other sale areas Include the names of streams and watersheds Depict buffer areas around lakes Depict the location of culverts/bridges, stream crossings, number of crossings, type of stream crossing, etc Depict the location of rock quarry sites and quantities to be removed at each site

- Include additional sections to the table: water quality stream crossings, road class, service level, maintenance level, proposed future status, closure, maintenance, etc.
- Include timing restrictions for class I stream crossings, and wildlife timing restrictions
- Include a description of proposed BMPs

MAPS

- Maps should include names of streams and watersheds
- Depict critical habitat areas for sable fish, herring, kelp and eelgrass beds, crabbing areas, seal haulout areas, etc.

TABLES

2-5 (page 2-15) and 4-46 (page 4-B3) are redundant.

ENDNOTES

1. U.S.D.A., Forest Service. 1995. Report to Congress. Anadromous Fish Habitat Assessment. R10-MB-279.
2. Hughes, W.A. and D. Peterson 1990. Field Investigations Report for Alternative Proposed Log Transfer Facilities for the U.S. Forest Service, Kelp Bay Project Area. U.S. Fish and Wildlife Service, Southeast Alaska Ecological Services, Juneau, Alaska.
3. USFWS 1994. Report of Field Investigations for Proposed Log Transfer Facilities in Port Houghton and on Baranof Island; Rodman Bay, Schulze Cove, St. John Baptist Bay, Nakwasina Passage, Noxon Creek, and Lisa Creek North.
4. Schaumberg, F.D. 1973. The influence of log handling on water quality. Report EPA-R2-73-085 (Washington: Environmental Protection Agency, Office of Research and Monitoring). 105 pp.
5. Buchanan, D.V., P.S. Tate, and J.R. Morning. 1976. Acute toxicities of spruce and hemlock bark extracts to some estuarine organisms in southeastern Alaska. J. Fish. Res. Board Can. 33:1188-1192.
6. Chang, B.D. and C.D. Levings. 1976. Laboratory experiments on the effects of ocean dumping on benthic invertebrates. I. Choice tests with solid wastes. Fish. Mar. Serv. Res. Dev. Tech. Rep. 637. 65 pp.
7. Schultz and Berg.
8. Conlan, K.E. and D.V. Ellis. 1979. Effects of wood waste on sand-bed benthos. Mar. Poll. Bull. 10:262-267.
9. Ellis, R.J. 1973. Preliminary biological survey of log-rafting and dumping areas in Southeastern Alaska. Mar. Fish. Rev. 35(5):19-22.

SUMMARY OF THE EPA RATING SYSTEM
FOR DRAFT ENVIRONMENTAL IMPACT STATEMENTS:
DEFINITIONS AND FOLLOW-UP ACTION *

Environmental Impact of the Action

LO--Lack of Objections

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC--Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA intends to work with the lead agency to reduce these impacts.

EN--Environmental Objections

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU--Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential environmental impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEC.

Agency of the Impact Statement

Category 1--Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2--Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new, reasonably available alternatives that are within the scope of the action. The identified additional information, data, analysis, or discussion should be included in the final EIS.

Category 3--Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analysis, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potentially significant impacts involved, this proposal could be a candidate for referral to the CEC.

* From EPA Manual 1600 Policy and Procedures for the Review of Federal Actions Impacting the Environment
February, 1987



United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
1889 C Street, Room 119
Anchorage, Alaska 99501-8120

ER 95/953

OCT 17 1995

Mr. Gary A. Morrison
Forest Supervisor
Chatham Area
Tongass National Forest
204 Signaka Way
Sitka, Alaska 99835

Dear Mr. Morrison:

In response to your request of August 1995, we have reviewed the *Northwest Barrow Timber Sale Draft Environmental Impact Statement* (DEIS). We offer the following comments for your consideration.

GENERAL COMMENTS

Proposed project information, resource descriptions, and impact analyses presented in the document were too general to allow thorough review of the proposed project. We suggest that the Final Environmental Impact Statement (FEIS) be presented with more detail and be thoroughly edited.

Rescission Bill Effects on the Project

The Forest Service, Fish and Wildlife Service (FWS), and Alaska Department of Fish and Game are cooperating to prepare conservation assessments for the Queen Charlotte goshawk, Alexander Archipelago wolf, and the marbled murrelet within the Tongass National Forest through the December, 1994, Interagency Memorandum of Understanding. The long-term land management requirements of these and other old-growth dependent species are also being addressed through revision of the Tongass Land Management Plan (TLMP). Recent analysis by the FWS found that listing the Queen Charlotte goshawk as endangered pursuant to the Endangered Species Act was not warranted primarily because of these ongoing conservation efforts. The FWS agrees to continue its support of, and participation in, these endeavors.

The July 27, 1995, Rescission Bill, P.L. 104-19, which expired on September 30, 1995, states that "no funds available to the USFS may be used to implement Habitat Conservation Areas (HCAs) in the Tongass National Forest for species which have not been declared threatened or endangered

pursuant to the Endangered Species Act, except that with respect to goshawks the USFS may impose interim Goshawk HCAs not to exceed 300 acres per active nest..."

Several timber sale proposals, including the Northwest Baranof Sale, are currently at various stages in the National Environmental Policy Act (NEPA) process, and may be subject to the Rescission Bill provisions. Collectively, these sales are expected to have local and cumulative adverse effects on habitat for the goshawk and other old-growth forest associated species by removing old-growth forest and fragmenting large old-growth blocks. We believe that habitat blocks that remain are critical for maintaining viable, well-distributed populations of wildlife across the forest landscape and for precluding the need to list species under the Endangered Species Act. Although there are ongoing, cooperative interagency efforts to gather more information on goshawks and their habitat requirements throughout Tongass National Forest, we are concerned that Rescission Bill provisions may be carried over into Fiscal Year 1996 and will affect all Tongass project planning during that time.

The FWS does not know of any scientific biological information supporting the goshawk provisions in the Rescission Bill. Although more information is needed to: 1) determine the specific effects of past timber harvest; 2) determine habitat associations that directly influence goshawk survival; and 3) prescribe future management that assures viability of species, the information that is available suggests that large blocks of old growth forest are necessary for goshawks. The FWS recommends that, to an extent statutorily possible, a conservative habitat management approach be taken to maintain the options required to conserve this species. The FWS remains highly concerned about the status of the Queen Charlotte goshawk and believes that the 300-acre HCAs at active nest sites will not suffice to assure their continued survival.

In order to address the full extent of effects from the Rescission Bill, the FWS recommends that a cumulative impact analysis be conducted for goshawks prior to identification of a selected alternative for this sale. This cumulative impact assessment should be conducted at the landscape level to address losses of habitats, and at the site-specific level to address loss of nest sites throughout the Baranof Island area. The cumulative impact analysis should address all timber sale projects and impacts authorized under the Rescission Bill. Subsequent NEPA documents for the Northwest Baranof Timber Sale and other sales located in the Baranof Island vicinity should be completed showing the effects of these new directions, particularly if the Rescission Bill is carried over into Fiscal Year 1996.

We appreciate the dilemma the Forest Service faces in planning management activities given the uncertain legislative climate. We assume that corrections will be made to this document and subsequent impact statements as more information is obtained. The FWS offers to assist the Forest Service in their planning effort, to the limit that budget and staff will allow.

Old-growth Retention

We suggest that the Northwest Baranof project plan include old-growth retention blocks as directed by the 1979 TLMP, as amended in 1986. We believe that the FEIS should discuss the use of the retention areas and identify their location or explain their exclusion from the plan. The TLMP directs management of these retention areas to "maintain the uneven-age structure of component stands, and that ensure the continued existence of old growth habitat components required to maintain related population levels of dependent wildlife and fish species." These retention areas may become critical in conserving old-growth habitat if HCAs are not incorporated into selected alternatives.

Wildlife and Fisheries

The DEIS does not give a complete analysis of the proposed project's impacts on fish and wildlife habitats. In October 21, 1994, scoping comments, FWS recommended several analyses be done prior to the DEIS. We continue to suggest that the following information be generated and included in the FEIS so that a complete fish and wildlife impacts review can be accomplished:

- a wildlife impacts analysis using the red-breasted sapsucker, hairy woodpecker, and brown creeper models;
- the latest available scientific information should be used to update all wildlife habitat capability models;
- percentages of past and projected changes should be included in the wildlife capability tables;
- an analysis of forest fragmentation and connectivity using at least a two tree length buffer around forest edges;
- an analysis of old growth patch size, spatial distribution, and wildlife habitat effectiveness;
- an analysis of the probabilities of increased sediment delivery to stream habitats and negative impacts on salmon spawning and rearing habitats due to road construction, use, and maintenance, and slope failure in areas of unstable soil; and
- a more in-depth analysis of cumulative effects on wildlife and fisheries, especially of past forestry management activities from the 1950s to the present.

The Anadromous Fish Habitat Assessment (AFHA), developed by an interagency group convened by the Forest Service, represents the most up to date scientific analysis of the effectiveness of current and past forest management practices at protecting anadromous fish habitat on the

11/17
Tongass National Forest. According to the AFHA report, we believe the Best Management Practices (BMPs) currently recommended for the Tongass National Forest do not adequately protect fisheries habitat because of: 1) incomplete implementation of current procedures, and 2) the need for additional direction for fish habitat protection.

11/12
The AFHA analysis also indicated that even completely implementing current procedures would not be fully effective in protecting anadromous fish habitat over the long term. We suggest the FEIS: 1) discuss AFHA findings; 2) acknowledge that BMPs may not be fully implemented; 3) recognize that even if BMPs were implemented they would not be fully effective at protecting anadromous fish habitat; and 4) discuss both implementation and effectiveness monitoring of prescribed BMPs. Also, we believe the FEIS should address the AFHA-identified need for greater protection of Class III and headwater stream channels. We suggest that the FEIS identify specific sites in need of restoration due to impacts from past logging activities, such as slope and road failure and culverts that are inadequate to provide fish passage.

11/11
Two Log Transfer Facilities (LTF) are proposed in St. John Baptist Bay in Alternatives 1, 2, and 4; whereas, the LTF Guidelines recommend only one LTF be located in any one bay. From 1985 to 1991, the National Marine Fisheries Service conducted a study to determine the distribution and abundance of juvenile sablefish in Southeast Alaska (Rutecki and Varosi 1993). They were found to be consistently abundant only in St. John Baptist Bay, for reasons unknown. We believe the FEIS should analyze whether the proposed barge LTF will impose negative impacts on this unique sablefish use area, and that the FEIS include mitigation measures to be applied for this high-value commercial fish resource.

Log Transfer Facility Sites

11/17
We are concerned with the amount of potential bark accumulation and attendant biological effects on the marine environment at the proposed LTF sites. The DEIS does not address existing bark depth at any of the sites, nor does it identify what mitigation measures would be implemented if bark accumulation is found to exceed the Alaska Timber Task Force guidelines for bark accumulation. We suggest that monitoring of bark accumulation be implemented and that permanent transects be established prior to LTF operation. We suggest that the National Pollution Discharge Elimination System monitoring and dive reports become part of the FEIS document.

11/16
Additional impacts associated with LTF sites relate to improper disposal of solid waste materials, such as discarded machinery, pipes, rolls of cables, oil drums, bottles, plastic, netting, and assorted debris. Such disposal has direct effect on marine mammals, such as whales, that have become tangled in cables at abandoned log storage areas, and other resident or transient aquatic life. We believe that appropriate mitigation, along with effective enforcement measures to eliminate such improper disposal, should be discussed in the FEIS.

11/14
LTFs are usually located at the mouth of estuaries, where protection from inclement weather conditions may be provided. Aquatic vegetation (i.e., seagrasses, kelps, and algae) occurring within the tidal and subtidal zones of estuaries are important to a variety of aquatic species. For example, eelgrass beds are important as they provide primary production, shelter, temperature regulation, and food for invertebrates, fish, marine mammals, and waterfowl; and sediment consolidation in subtidal estuarine systems. Eelgrass beds, classified as special aquatic sites under Clean Water Act regulations, can be degraded or destroyed by bark accumulation and shading from log rafts. We suggest that the FEIS address the direct, indirect, and cumulative impacts of bark and other solid waste materials on these special aquatic sites and the potential effect on resources of commercial and subsistence value.

Waterfowl

11/11
St. John Baptist Bay, Goose Cove, Rodman Bay, and Nakwasina Passage are known waterfowl concentration areas that are in the vicinity of proposed helicopter activity. We suggest the FEIS address possible effects helicopter activity will have on seasonal waterfowl use in these areas.

Other Trust Resources

11/16
As age structure of seed producing coniferous forest declines as a result of clearcutting activities, populations of specialized species, such as red crossbills, will inevitably be adversely affected, ultimately causing local reductions or extirpation. The DEIS does not address direct and cumulative impacts on these and other Federal trust species (e.g., neotropical migrant bird species) that could be affected by the loss of mature, old-growth forest and/or forested wetlands. We suggest that surveys be conducted to determine population viability and distribution.

11/17
Assessments should address habitat capability on a landscape level and areas that produce large cone crops at lower elevations should be identified and included as retention areas.

SPECIFIC COMMENTS

Many citations given throughout the DEIS are not found in the "Literature Cited" section. Examples include, but are not limited to: Morse 1995, Robertson 1992, Lorenz 1995, Hartmann 1995, Ouderkirk 1995, Dougan 1995, Forest Service 1983, Mork 1995, Baichal 1993, Martin et al. 1995, Forest Service 1986, Boes and White 1994, Lindell 1993, USDA Forest Service 1991c, Thomas 1990, Huecker 1995, Lorenz 1995, Kruse 1993, Freese and O'Clair 1984, Schenck 1995, and Copenhagen 1989. We suggest that these be added to the bibliography.

Chapter One

2176
Page 12, paragraph 3: We believe that "Hunting, Fishing, and Subsistence" are not mutually exclusive, although there are some differences. Effects of these uses are cumulative. The DEIS did not address trapping specifically. We suggest that the heading be: "Subsistence and Recreational Harvests", and the text discuss hunting, trapping, and fishing for each set of users.

Chapter Two

Page 4, second paragraph: The DEIS refers to Figures 2-1 and 2-3 to illustrate overstory removal, but Figures 2-2 and 2-3 show overstory removal. The FEIS should include this correction.

Page 8, paragraph 4: We believe the ecosystem management approach should include addressing the entire island, or all of Southeast Alaska, for some species (e.g., Queen Charlotte goshawk and marbled murrelet).

Page 11, Alternatives 4 and 5: We believe the effects on wildlife habitat and traditional subsistence should also be addressed under these alternatives headings.

Page 14, first paragraph and Table 2-3: We believe that Management Indicator Species (MIS) representing old-growth cavity nesting and snag dependent birds (brown creeper, hairy woodpecker, and red-breasted sapsucker) should be included in the wildlife effects analysis for the Northwest Baranof project. Old-growth will be harvested, therefore, there will be an adverse impact on these species. The brown creeper prefers large, old-age trees and below 15,000 feet elevation for foraging and nesting. For foraging and nesting, the hairy woodpecker is associated with snags and partially dead trees found in old-growth stands—hairy woodpeckers represent primary cavity excavators. The red-breasted sapsucker is also a primary cavity excavator closely associated with open low volume (8,000-20,000 board feet/acre) old-growth conifer stands for feeding, but requires larger diameter trees and snags for nesting (Suring 1988). We suggest that impacts on these species should be added to this section.

Page 14, second paragraph: We suggest an analysis be conducted to determine how much old-growth interior habitat (old growth patches) is present in the project area after subdrainage approximately two tree lengths buffer around the edges of old-growth stands. This analysis will assist in determining habitat capability required by species dependent on old-growth interior, such as the marbled murrelet. An example of such an analysis can be found in the Polk Inlet EIS. We suggest a patch size effectiveness analysis be included in the FEIS.

Based on information in the scientific literature, old growth characteristics would not be attained until 250+ years (Alaback 1982, Schoen et al. 1981, Wallmo and Schoen 1980). In order to maintain some structural old growth characteristics to ensure wildlife dispersal, a longer rotation schedule would be required. We believe the FEIS should explain the rationale for using 150 year rotation schedule and the effects of that rotation on fish and wildlife resources.

We believe Table 2-4 can be improved by including the amount on old-growth present in 1954 and the old-growth acres and percent proposed for harvest in each alternative. The "Percent of Current" acres of old growth under Alternative 2 appears erroneous. It should be "90%" instead of "95%", otherwise the number of acres remaining is incorrect. It appears the amount of old growth to be harvested in Alternative 2 (51,651 - 46,309 = 5,342 acres) is greater than the total acres proposed for harvest in that alternative (2,505 acres). We suggest this be corrected.

Page 14, last paragraph, last sentence: We suggest this sentence read: "The short and long-term effects of LTF use on the marine ecosystem will be minimal."

Page 15, Table 2-5: Alternatives 1, 3, and 4 propose to use the Northeast Rodman Bay LTF site. We do not recommend this site because it was approved as an alternative to reconstruction of the Appleton Cove LTF. Since the Appleton Cove LTF has already been reconstructed, it should be used to transfer the timber harvested in this area (See U.S. Fish and Wildlife Service, December 7-13, 1994 field investigation report).

Page 18, Table 2-9: We suggest the table state what year the percentages of old growth remaining under each alternative are for. We are assuming these figures are projected percentages of old growth that existed in 1954.

Chapter Three

Page 3-5, Mining/Mineral Potential: These two paragraphs contain the only discussion and references to minerals in the DEIS. We believe the FEIS should include a short summary and discussion of any mineral activity tracts in or near the timber sale area.

Maps and descriptions of mineral tracts that may be in the project area can be found in the TLMFP Revision Supplement to the DEIS, Chapter 3 (August 1991). Table 3-44 and Figure 3-16 on pp. 3-132-134 describe the location of these mineral activity tracts with mineral development potential on the Tongass National Forest. There are 52 tracts of various sizes, totalling 604,989 acres.

The citation for "Brew, David A." in the "Literature Cited" section listing Professional Paper 792 is incorrect. We suggest correction for both open file report citations, as follows:

Brew, D.A., L.J. Drew, J.M. Schmidt, D.H. Root, and D.F. Huber. Undiscovered Locatable Resources of the Tongass National Forest and Adjacent Lands, Southeast Alaska. U.S. Geological Survey, Open File Rep. 91-10, 1991, 370 pp. 16 plates.

Brew, D.A., and J.L. Drinkwater. Tongass Timber Reform Act Wilderness Areas Supplement to U.S. Geological Survey Open File Report 91-10 (Undiscovered Locatable Mineral Resources of the Tongass National Forest and Adjacent Lands, Southeast Alaska.) U.S. Geol. Surv. Open File Rep. 91-343, 1991, 35 pp.

We do not believe this timber sale will have major effects on the mineral resources of the project area, and may benefit new mineral exploration. Proposed roads may improve accessibility and new road cuts could reveal mineralization not otherwise exposed.

Page 10, last paragraph, Old-growth Forests: The DEIS states that old-growth stands are those in which the majority of the trees are more than 150 years old. We do not believe this is enough

time for development of old growth characteristics, which are required by certain species, such as, but not limited to the Sitka black-tailed deer, marbled murrelet, Queen Charlotte goshawk, and the Pacific-slope flycatcher (see Page 14, second paragraph comments above). We suggest that the FEIS address this issue.

Page 24, Wildlife Species: (See Chapter 2, page 14 comments above). The Sitka black-tailed deer habitat capability model used for analyzing the effects of timber harvest on wildlife habitats is outdated, overly simplistic, and is not useful for determining population viability (Kieffer and Eckhardt 1994). We suggest that the Forest Service use the latest available scientific information to update all the statistical models and employ this analysis in the FEIS.

Page 25, Mountain Goat, third paragraph: We suggest that the FEIS describe the extent and location of goat wintering habitat.

The reference "Suring et al. 1988" is listed as a habitat capability model for martens in the "Literature Cited" section. This paragraph discusses goats, therefore, we suggest a correction be made in the FEIS.

Page 31, paragraph 4, line 3: The word "habitats" should be "habitat" and the word "coniferous" should be "coniferous."

Page 31 and 32: We suggest the FEIS include information on how the wildlife and plant surveys were conducted. Dates, locations, methods, and other pertinent survey descriptions should be included.

Page 43, paragraph 3, line 2: We suggest this sentence read: "...to the harvest, processing, and consumption..."

Page 45, paragraph 4, line 6: This sentence is missing a date: "between 1987 and (?)", which...". We suggest clarification of the time period.

Page 52, paragraph 2: We believe the FEIS should address how off-road vehicles affect wildlife and their habitats.

Page 68: It is unclear how many miles of the existing roads are presently open and how many are presently closed. We suggest a change in Table 3-27 to reveal this information.

Chapter Four

Page 1, paragraph 4: We believe the date on the reference "USDA Forest Service 1970" should be "1979."

Page 10, first paragraph: The DEIS states that forested wetlands will regenerate timber species after harvest, but at a slower rate. We suggest the FEIS include information to support the belief that forested wetlands prescribed for harvest are capable of regenerating on a sustainable yield basis. We further suggest the analysis demonstrate the rate of regrowth expected on hydric soils.

Page 9, Floodplains, Wetlands, and Riparian Areas: During road construction, some excavation of wetland overburden is required. We suggest the direct and cumulative impact associated with disposal of this material be discussed in the FEIS. We further suggest that total cubic yards removed and procedures for its disposal be included in the FEIS.

We are concerned about degradation of wetlands caused by heavy equipment impacting vegetation, causing impairment of natural drainage patterns and loss of nesting and foraging habitat for migratory birds and other species. These alterations can result in permanent hydrologic change and, in some cases, loss of functional wetland characteristics. We suggest the FEIS address cumulative impacts on wetlands and how the goals of Executive Order 11990, as amended, will be met in order to avoid to the extent possible the long- and short-term adverse impacts associated with wetlands destruction or modification.

Pages 19-25, Tables 4-12 through 4-16: We believe it would be helpful if each table had some reminder, such as a short title, of what each alternative represents.

Page 20, last paragraph, second sentence: The DEIS states "Alternative 2 would have the greatest impact..." We believe this sentence should read: "Alternative 1 would have the greatest impact..."

Page 21, paragraph 1: We suggest the FEIS cite which wildlife habitat capability models are used for the project analysis and list them in the "Literature Cited" section.

Page 21, paragraph 1, fourth sentence: We believe this statement is incorrect. The numbers generated by the models do not "represent the number of deer present in each WAA at any time." These models are not carrying capacity models, and they do not give actual numbers of animals at a location. These models quantify habitat quality and can only give an estimate of the habitat potential (the maximum number of animals that the habitat can support) in a certain area at a particular time. We suggest this statement be corrected in the FEIS.

Page 23, 24, 25, 26, & 29: The tables on these pages are titled "Resulting Habitat Capability Index" for each MTS species used in the wildlife effects analysis. These tables are actually presenting an estimated change in possible numbers of animals in the project area. A Habitat Capability Index represents the capacity of a given habitat to support a selected fish or wildlife species. A Habitat Capability Index must fall within the numerical range of 0.0 to 1.0. On this scale 0.0 represents no habitat suitability and 1.0 represents optimum suitability. We suggest the titles of these tables be modified to reflect the data presented.

Page 25, second paragraph: The marten habitat capability model does not consider edge effect when determining remaining marten habitat after timber harvest. We believe an analysis should be conducted to determine how much old-growth interior is present in the project area after subtracting a two tree length buffer around the edges of old-growth stands. This analysis will assist in determining effects to habitat required by species dependent on old-growth interior, such as the marbled murrelet. An example of such an analysis can be found in the Politi Intel EIS.

Page 26, first paragraph: The citation "Suring et al 1988" refers to a marten model listed in the "Literature Cited" section. We suggest the goat model be added to the list.

Page 26, second and Appendix A, Page 5, Mitigation Measures: We are concerned about the effectiveness of the Forest Service road closure policy. The FWS has observed that implementation of this policy has been largely ineffective in eliminating or controlling access to areas. Offering road closures as mitigation for adverse impacts on wildlife populations is expected to be of minimal benefit to wildlife if it can not be enforced. We believe this issue should be further addressed in the FEIS.

We recognize that road construction, maintenance and repair are extremely expensive. We suggest the Forest Service conduct an analysis of using more helicopter yarding as an alternative harvest method to reduce the need for additional roads. Helicopter yarding benefits wildlife by reducing the amount and extent of new road construction, thus lessening the potential for over-harvest of species. We believe it may reduce the amount of old-growth timber permanently removed by road construction, and it reduces the need to construct roads on soils with mass movement indices, thus reducing impact caused by sediment loading of streams. Helicopter yarding also protects karst landscapes, wetlands, and wildlife habitat.

We believe the FEIS should identify and include an analysis of impacts to mountain goat wintering habitat.

Page 27, Bald Eagle: The Memorandum of understanding was modified in 1990, and is now an Interagency Agreement. We suggest the FEIS reflect this.

We believe a request for a variance to the Interagency Agreement should be supported by maps, photos, location description, the alternatives considered, the potential impacts associated with each alternative, and a statement of the preferred course of action. Variance requests are to be considered on a case-by-case basis. Any variance will likely recommend timing constraints for human activities that occur near bald eagle nests.

The FWS is concerned about the potential difficulty of reconstructing roads near bald eagle nests without causing disturbance, and we suggest that the Forest Service continue close interagency coordination.

Page 28. Cumulative Effects, last paragraph. The DEIS states that the change in habitat capability resulting from previous harvest in the project area ranges from 17 percent to 46 percent. Table 4-19 does not reflect this range. We suggest this be rectified in the FEIS.

Page 29. Long-term Productivity: The DEIS acknowledges that old-growth dependent species, such as the hairy woodpecker and brown creeper, would experience decreases in long-term habitat capability, but failed to include these MIS species in the wildlife effects analysis. We suggest this be corrected.

Page 29. Biological Diversity: The DEIS assumes that all alternatives are expected to maintain viable populations of all plant and animal species in the project area—but the wildlife models used are in need of updating (see comment for Chapter 2, Page 14). We believe more empirical information is available and should be used to update these models before impacts analysis in the FEIS can yield this assumption.

Page 33. Marbled Murrelet: We do not believe enough is known about the marbled murrelet to make the assumption that this project will have minimal impact on the overall murrelet population in Southeast Alaska. As stated in the DEIS, the factors currently limiting the marbled murrelet populations have not been identified. We suggest the FEIS address cumulative effects on the marbled murrelet populations on Baranof and Chichagof Islands, considering other current and planned timber harvest in the area.

The DEIS did not state if marbled murrelet surveys were conducted in the Northwest Baranof project area. We suggest the FEIS identify what investigations were conducted and what actions are proposed and/or to be implemented to conserve marbled murrelet habitat and nesting sites. The FWS recommends a landscape management plan be developed that will include monitoring and retention of large tracts of mature, old growth forest with suitable branch structures to support murrelet nests. In addition, we believe studies should be conducted on habitat requirements on a project-wide and forest-wide scale.

Peril Strait has been identified as a major foraging site for marbled murrelets ("A Conservation Assessment for the Marbled Murrelet in Southeast Alaska," unpublished FWS report). Concentrations of marbled murrelets in the marine environment typically coincide with large areas of old-growth forest habitat. We suggest the FEIS address possible impacts (such as use of helicopters) the project will have on the marbled murrelet population at the helicopter LTF sites in the project area.

Page 33. Goshawk: The DEIS Identifies areas where HCAs can be located to maintain options for goshawk population viability management. As stated in the General Comments section of this letter, we are concerned that these old growth blocks will not be included in the FEIS, or preserved on the ground, increasing the necessity of identifying old growth retention areas.

Page 34, Harlequin Duck: We believe the assumption that the harlequin duck will not be affected by timber harvest activities is unsubstantiated because little is known about the harlequin duck population in Southeast Alaska. However, this species is known to be dependent on riparian habitats, which will be affected by this timber sale's roads and harvest units. In light of unavoidable harvest impacts, we suggest the basis for the "no effect" assumption be described.

Page 35. We suggest combining the information in Tables 4-20 and 4-21.

Page 43: We suggest putting the totals for Table 4-29 on the same page.

Pages 45-53. Tables 4-31 through 4-34. 4-37: We believe it would be helpful if each table had a reminder of what each alternative represents.

Page 46: The DEIS acknowledges that the habitat capability for the black-tailed deer in the project area does not appear sufficient to support a population capable of sustaining hunting on a level comparable to average harvests from 1987 to 1993, under any alternative. The deer population is heavily hunted by nearby subsistence communities, which will also be affected by other ongoing and proposed timber sales (e.g., Elght Fathom, S.E. Chichagof, Indian River, Kelp Bay, and Neka/Atud Bay, Ushk Bay). We suggest that caution be taken to maintain Sitka black-tailed deer habitat to assure a self-sustaining, viable long-term population for consumptive and nonconsumptive users, and that this be addressed in the FEIS.

Page 50, paragraph 2: We suggest that quotation marks, italics, or indentation be used to indicate that this is a direct quote from the Alaska National Interest Lands Conservation Act (ANILCA).

Page 52, paragraph 1, line 2: The DEIS states that "WAA 3313 shows that with increasing demand and slightly reduced deer habitat capability (from the worst case alternative)..." We believe the DEIS should identify the "worse case alternative."

Page 53, Table 4-37 title: We believe using the term "significant possibility of a significant reaction" is an ambiguous way to comply with Section 810 under ANILCA, which states that the evaluation should conclude with a distinct finding that the proposed action would or would not significantly restrict subsistence uses. We suggest the FEIS not use wording like "probably" or "likely".

Page 53, paragraph 4, line 1: There is an implication that the foods used for subsistence include deer plus a variety of plant resources. Furthermore, there is no mention of other land mammals, sea mammals or fish. We suggest these classes of foods be added the FEIS.

Page 55, paragraphs 2 and 5: We believe there is a general misunderstanding concerning the authority of the Federal Subsistence Board (Board). In these paragraphs, there are statements indicating that the Board can "regulate" the nonsubsistence harvest of deer. The Board only has the authority to close Federal public lands to nonsubsistence hunting when subsistence

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needs cannot be met. The Board does not set season or bag limits for nonsubsistence hunting. Wildlife such errors be corrected wherever they occur throughout the document.

Page 56, paragraph 3: In line 1, we suggest changing "These" to "Thus." This paragraph refers to the "potential" for significant effect on subsistence users of deer in the Project Area. It is unclear which alternatives would have a potentially significant effect. The potential effects are also unclear. We suggest the FEIS include the percent decrease in deer harvests that would result in a potentially significant effect on subsistence uses.

Page 55, paragraph 7, first sentence: The DEIS states that "approximately 1,725 to 3,245 additional acres will be harvested in the Project Area." The alternatives comparison table on page 12 in Chapter 2 shows a range of proposed harvest acres of 1,725 to 3,263. We suggest the FEIS correct this discrepancy.

Page 87, paragraph 5, line 3: We suggest changing "greatest positive impact" to "smallest negative impact."

Page 90, paragraph 6: The DEIS stated that timber rotations are 100 years. Based on information in the scientific literature, old growth characteristics would not be attained until 250+ years. In order to maintain some structural characteristics of old growth required by some wildlife species, the recommended harvest cycle we believe a longer rotation schedule is required (250 - 300+ years).

Appendix G

The DEIS states (Chapter 2, paragraph 3) that specific mitigation measures are identified on the respective Unit and Road Cards, but the wildlife sections in all of the Unit Cards only say that wildlife specialists are not needed, field review has not been conducted, and that remarks are "Pending." We believe that wildlife mitigation information should be included in the FEIS.

Appendix II. Road Cards and Alternative 4 Map

Road #75851 appears to run through a pond or lake. We suggest the location of this road be clarified.

Appendix I

Page following first two maps, paragraph 6, line 5: "50 percent higher" is not the same as "twice what was reported." We suggest this be corrected.

Page 11 (under "Angoon"), paragraph 2. We believe the FEIS should include the implication of implementing the proposed project (which will reduce wildlife habitat capability) when some of the Wildlife Analysis Areas (WAA) are not sufficient to meet current subsistence demands.

15
27
Page 11, paragraph 4, line 1: We suggest changing "based limited use" to "based upon limited use."

15
27
Pages 12-19, graphs on estimated deer supply and demand: There is repeated reference to the "worst-case" and "preferred" alternatives without identifying either. We suggest these be defined in the FEIS.

We appreciate the opportunity to review this document. If you have questions about these comments, please call either Nevin Holmberg, Fish and Wildlife Service at (907) 586-7240, and/or James Coldwell, Bureau of Mines at (907) 364-2111.

Sincerely,


Regional Environmental Officer - Alaska

LITERATURE CITED

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TONGASS HUNTING AND FISHING COALITION

PO Box 20637
Juneau, AK 99802

Forest Service
Tongass National Forest, Chatham Area
Sitka Ranger District
Tel Fax (907) 747-4331

Re: N.W. Baranof Draft EIS

Oct. 16, 1993

Dear Forest Service,

The Tongass Hunting and Fishing Coalition is a recently formed non-profit corporation, registered with the State of Alaska.

Our membership is growing and represents sports, commercial and subsistence users of fish and wildlife. Currently we have members in Juneau, Sitka, Ketchikan, Haines, Angoon, Gustavus, Petersburg and some members outside of Alaska. Some of our members regularly use and depend on the Northwest Baranof planning area.

Our growing membership represents both the scientific and practical aspects of fish and wildlife resources. We are concerned that our interests are not always represented in fish and wildlife issues, even though we have substantial economic, cultural and social dependency on these resources.

Our members recognize the need for sustainable timber harvest as a legitimate and necessary economic element in the region. However, we are concerned that fish and wildlife resources are continually impacted in order to continue an unsustainable timber harvest and industry.

The Northwest Baranof Statement appears to be an example of the timber industry being given priority over fish and wildlife dependent industries and users.

In reviewing the Draft Statement some specifics are of special concern:

1) We do not believe that you have accurately portrayed environmental impacts to fish and wildlife.

A lot of concern has been expressed about the use of inaccurate timber type maps on which to base wildlife models. The continued targeting of high-volume old growth for timber sales will continue to create adverse impacts to fish and wildlife.

M.J. MEYCALF

907 708 3374

P.02

Page 2, Fishing and Hunting Coalition Response, Oct 16, 1993

Impacts to deer and bear, we believe, have been understated. This may be the result of not specifically being able to identify the location of volume class 6 and 7.

The continuing problems with "fall-down" in current and past sales seriously impacts fish and wildlife habitat.

We do not believe that you have accurately portrayed economic impacts to fish and wildlife dependent industries and users.

Your economic analysis deals only with timber and related jobs. You state that Community economics are important only to timber related jobs and that recreation and commercial guiding will be unaffected. We disagree with these conclusions.

Subsistence has proven to be of substantial economic importance to the region and especially to Sitka and Angoon, in relation to this project. This is not accounted for in your analysis.

Commercial guiding is, as you state, a growing industry. However, there is intense competition for areas due to the growing demand and the diminishing supply. Outfitters that guide out of Sitka have stated that they have difficulty finding areas to hunt. One of our members, who is a commercial outfitter, has stated that clear-cutting of bays has forced guides to crowd into unlogged areas. Admittedly and other uncut areas are literally overrun as a result.

Your analysis ignores the cumulative impacts of past logging and planned future logging.

The past logging targeted high-volume old-growth and provided little, if any, fish and wildlife protection. Rodman Bay is a good example of streams cut to the banks and the best of the wildlife habitat cut. We recognize that much of this destruction was done in the 1960's and 70's, but this puts a significant burden on current forest managers to compensate for past practices. The NW Baranof alternatives, other than the no-action one, fails to recognize this need.

In summary we have taken note of the Sitka Fish and Game Advisory Board decision to request, by a 9-0 vote, the selection of the No-Action Alternative. We agree with their finding and until a more modest level of timber harvest is prescribed.

Sincerely,
Don Schmiede

K-114

Appendix L

Response to Public Comments

Appendix L

Response to Public Comments

Response to Public Comments

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Response to Public Comments

1. Purpose and Need

1a. Since the 50-year contract has been cancelled by the FS, there should be a halt to all timber sales in the former contract areas. (MJJ)

FS Response: The purpose and need for the Northwest Baranof Project is to implement direction contained in the TLMP, as amended, to help provide a sustained level of timber supply to meet market demand, and to provide employment in the wood products industry of Southeast Alaska. The Purpose and Need for this project is independent of the presence or absence of a long-term contract. Providing a supply of timber from the Tongass National Forest is an objective of the Tongass Timber Reform Act (TTRA), of TLMP, and of the Alaska National Interest Lands Conservation Act (ANILCA).

1b. Why the reduction from 120 mmbf (in the original proposed action) to 60 mmbf? (GSW)

FS Response: The original proposed action as displayed in the scoping document released in July 1993 called for approximately 112 mmbf of sawlog volume. The revised proposed action as displayed in the second scoping document released in September 1994 called for approximately 47 mmbf of sawlog volume. As explained in that second scoping document, after the first scoping document was released APC shutdown its pulp mill in Sitka, the FS terminated the APC Long-term Timber Sale contract, there were additional requirements for field reconnaissance and protection of wildlife habitat, and there was an expansion of the independent timber sale program. Furthermore, three VCUs were dropped from the Project Area. As a result of all of these changes, the FS developed and displayed a revised proposed action that reflects an independent sale program with seven smaller, isolated sale areas.

1c. Proposed harvest areas are too close to Sitka and should not be logged. (FG)

FS Response: Comment noted. This comment surfaced during Project scoping, and is addressed in Alternatives 3 and 5.

1d. The Purpose and Need for the project is biased on the side of large-scale logging. (SCS)

FS Response: The Council on Environmental Quality regulations do not provide specific guidelines for the development of the purpose and need for a project. Thus an agency has discretion in determining the purpose and need. The FS has exercised this authority in a reasonable way that is not arbitrary or capricious. The Final EIS examines a full range of alternative methods of meeting the specified purpose and need. The purpose and need statement is consistent with the sale schedule included in the TLMP as amended and the current sale schedule.

The Project Area encompasses more than 60,000 acres of productive forest land and contains over one billion board feet of timber. The purpose and need for this project is to provide between 30 and 100 million board feet of timber, approximately 0.03 to 0.1 percent of the timber available in the Project Area. The scale of logging the represents depends much upon one's point of view. While some may consider this amount of logging to be too great, others counter that it is insufficient. We feel that this is a modest amount of harvest for the size of the Project Area which will allow timber purchasers to obtain a reasonable amount of wood fiber in a reasonably economical manner with minimal impacts to the physical and social environment.

1e. The FS is not constrained to offer the timber proposed in this project, despite its claims to the contrary in Chapter 1. (SCS)

FS Response: In Chapter 1, we describe the purpose and need for the Northwest Baranof Project "to implement direction contained in the TLMP, as amended, to help provide a sustained level of timber supply to meet market demand, and to provide employment in the wood products industry of Southeast Alaska." This is the intended purpose for the project, it is not a constraint. The range of volume specified in the purpose and need statement

(30 to 100 mmbf), the range of volumes specified in the four action alternatives, and the inclusion of the no-action alternative (Alternative 5) recognizes that there are opportunities for providing a range of timber volume to meet market demand from as low as 0 to over 66 mmbf.

2. TLMP and Multiple-Use Management

2a. Page 4-2; The TLMP LUDs are permissive, not dictatorial, and should not drive management decisions. (SCS)

FS Response: Although the TLMP permits timber harvest in the Northwest Baranof Project Area, and schedules timber sale planning and preparation during this time period, we recognize that there is no requirement for timber harvest to take place now. However, the timber harvest, road construction, and related activities proposed for the Project Area are consistent with the LUDs assigned to each VCU. The allocation of all VCUs in the TLMP to the four LUDs represented a firm decision to manage them accordingly. As stated in the TLMP Final EIS (p. III-4), “these LUDs describe the broad purpose of management for each area of the National Forest, and establish specific management constraints. A decision to allocate an area to a LUD is a decision to manage that area for any of the permitted activities listed in Appendix D in accordance with the stated implications.”

2b. The Project Area was selected without any public involvement or NEPA clearance. The project should be terminated and a new planning process should be commenced that fully complies with the NEPA. (SCS)

FS Response: The Forest Plan (TLMP, as amended) is a programmatic document which determines how the forest will be managed. The Forest Plan specifies the land use designations (LUDs) for each of the 867 VCUs on the Forest. VCUs designated LUD III and IV permit timber harvest and road construction activities. In addition, the Forest Plan details management direction/emphasis for each Management Area and specific Management activities for two specific time periods (1985-89 and 1990-94). The Forest Plan schedules anticipated management outputs from the Chatham Area. Timber harvest ranging from 70 million to 120.6 million board feet annually is specified. All of these decisions were made within the NEPA process.

2c. The decision not to address higher-level planning decisions is a violation of the NFMA. (SCS)

FS Response: The FS uses a two-step planning process. The first level is the Forest Plan, which provides land-use allocations. The second level is the project plan, which provides site-specific analysis. We have determined that the Northwest Baranof project is consistent with the Forest Plan. There is no requirement that we address Forest Plan level issues during project-level planning. Furthermore, the section of NFMA that you refer to provides directions for integrating individual forest resource planning into the forest plan. It does not specifically refer to project-level planning.

2d. Modify an existing alternative to contribute to the obligation set by Congress in TTRA. (KPC)

FS Response: Comment noted. Please refer to Chapter 1 for discussion on how this project relates to TLMP direction. The Desired Condition section in Chapter 1 is developed from TLMP, as amended, as well as the Alaska Regional Guide. As you noted in your letter, the direction set by TTRA states that the FS will seek to provide a supply of timber to meet market demand, “...to the extent consistent with providing for multiple use and sustained yield of all renewable forest resources,...”. The four alternatives in this plan have met this requirement.

2e. Timber harvesting should be given priority in the Project Area. (JWR)

FS Response: The TLMP allocates each of the ten VCUs within the Project Area to LUD III or LUD IV as we stated in Chapter 1 of the Draft EIS. Of the ten VCUs only three VCUs are allocated to LUD IV (VCUs 291, 292, and 299). LUD IV provides opportunities for intensive development of resources as you have suggested. The four action alternatives have proposed varying levels of harvest designed to meet the purpose of LUD IV where it is environmentally practicable. The other seven VCUs were allocated to LUD III. LUD III is to be managed for

Response to Public Comments

a variety of uses including both amenity and commodity uses. Placing a priority on timber harvest is not compatible with a designation of LUD III.

2f. Manage the Project Area for multiple uses. Tourism, recreation, subsistence, fisheries, and spiritual attachment will suffer if the project is implemented. (MB2, PP, PE, SCS)

FS Response: The Multiple-Use Sustained Yield Act of 1960, Section 1 states, "It is the policy of the Congress that the National Forests are established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes." The Tongass National Forest, as a whole, is managed for multiple use. Not every area, watershed, or travel route can accommodate every use at all times. Under the TLMP as amended, approximately 60 percent of the Tongass National Forest is in Land Use Designations which do not allow timber development. These areas provide tourism, recreation, subsistence, fisheries, scenery, wildlife, or other spiritual benefits in a setting unfettered by timber development.

In the Project Area VCUs 291, 292, and 299 have been given LUD IV designations by the TLMP (1979, as amended). LUD IV areas are to be managed for intensive resource use and commodity development. The remainder of the VCUs in the Project Area are designated by the current forest plan as LUD III. LUD III areas have high amenity values and high commodity values and are to be managed in a compatible and complimentary manner to provide the greatest combination of benefits.

It is unreasonable to expect LUD III and IV areas to provide the same quantity and breadth of amenity uses and values as areas not managed for timber development. When timber is harvested, amenity attributes of the areas will change. Attributes in LUD IV areas will be particularly different from those of areas with no timber harvest. Effects of timber harvest will be less in areas designated LUD III than in LUD IV areas. Harvest method selection; unit design, spacing, and placement in the landscape; mitigation measures; application of TTRA buffers; adherence to Best Management Practices (BMPs); and maintenance of 500-foot shoreline and 1000-foot estuary buffers will maintain tourism, recreation, subsistence, fisheries, and spiritual attributes consistent with the land use designations in the Project Area.

2g. Page 4-2; It is inappropriate to assume that the no-action alternative would represent only a delay in implementing the TLMP. (SCS)

FS Response: TLMP assigns Land Use Designations (LUDs) for each of the 867 VCUs on the Forest. Each LUD describes the broad purpose of management for each area of the Forest. LUDs III and IV permit timber harvest and road construction activities. The TLMP, as amended, also details management direction/emphasis for each Management Area and scheduled specific Management activities for two specific time periods (1985-89 and 1990-94). Furthermore, TLMP scheduled anticipated management outputs from the Chatham Area, including annual timber offerings ranging from 70 million to 120.6 million board feet annually. Therefore the allocation of all VCUs in the TLMP to the four LUDs represents a firm decision to manage them accordingly. As stated in the TLMP Final EIS (p. III-4), "these LUDs describe the broad purpose of management for each area of the National Forest, and establish specific management constraints. A decision to allocate an area to a LUD is a decision to manage that area for any of the permitted activities listed in Appendix D in accordance with the stated implications."

Project level decisions to defer timber harvest or select the no-action alternative have no affect on TLMPs ability to determine management direction for each VCU. Selection of the no-action alternative for the Northwest Baranof Project would not change the Forest Plan designations for the Project VCUs as LUD III or LUD IV. Future projects could propose additional timber harvest in the Northwest Baranof VCUs or any VCU designated LUD III or LUD IV. Selection of the no-action alternative would most likely only defer harvest in the Project Area until a later date. Harvest in the Project Area would probably only be precluded if management direction for those VCUs is change at the Forest Plan level.

3. Alternatives

3a. Page 2-19: The title of the section “Actions Common to All Alternatives” should include only the action alternatives. (SCS)

FS Response: We believe it is clear that the no-action alternative does not propose any actions. To title the section “Actions Common to All Action Alternatives” would be redundant.

3b. Chapter 2: The Alternative descriptions describe only the benefits and not the drawbacks of the Alternatives. We suggest the Alternative descriptions discuss where resource values are diminished by the alternative. (SCS)

FS Response: The alternative descriptions in Chapter 2 provide the theme or intent of the alternatives as explained in the Draft EIS in the paragraph preceding the descriptions. It does not provide benefits or other effects of the alternatives. Chapter 4 provides the description of the environmental consequences of the alternatives. The Council on Environmental Quality directs that Chapter 2 “should be devoted to describing and comparing the alternatives. Discussion of the environmental impacts of these alternatives should be limited to a concise descriptive summary of such impact in comparative form, including charts or tables...”

3c. Page 2-11, Alternatives 4 and 5; effects on wildlife habitat and traditional subsistence should also be addressed under these alternative descriptions. (USDI)

FS Response: See response to 3b above.

3d. The comparison of alternatives in Chapter 2 does not provide enough quantitative or site-specific information for the decision maker to compare alternatives adequately. (SCS)

FS Response: The purpose of Chapter 2 is to provide a brief comparison of the Alternatives. Site-specific information is provided in Chapters 3 and 4 and the EIS Appendices and in the Project planning record. The decision maker and other reviewers have access to all of this information.

3e. Page 2-13; Discuss how well each alternative leads toward the desired condition for the Project Area. (SCS)

FS Response: As stated in the discussion of desired condition in Chapter 1, the identification of the desired condition and analysis of the existing condition for an area are the first steps in implementation of a Forest Plan at the project level. This information allows us to identify opportunities for project-level NEPA planning and leads to the development of a purpose and need for the project. As a result, all alternatives are intended to meet the desired condition for the Project Area as based on management direction contained in the TLMP and in the Alaska Regional Guide.

3f. The range of alternatives was not broad enough (in terms of cutting methods and harvest locations) to reflect public opinion on what ecological conditions should be maintained in the Project Area. (SFS, SCS)

FS Response: Council on Environmental Quality regulations governing the implementation of the National Environmental Policy Act (NEPA) require that the alternatives, including the proposed action, respond to the underlying purpose and need for the project. The regulations state that agencies are required to “...rigorously explore and objectively analyze all reasonable alternatives...” Alternatives must meet the project purpose and need and should address the significant issues to be considered “reasonable.” In the Northwest Baranof Project we examined a wide range of harvest methods and, in fact, applied four distinct harvest methods with many variations (related to percent removed). Furthermore, in the course of field investigations and ID Team analysis, we examined hundreds of potential harvest unit locations throughout the ten VCUs in the Project Area. In fact, we examined every timber stand in the Project Area for its potential to be included in this project. The units that are displayed in the four action alternatives are the product of three years of field investigations, and many hours of subsequent ID Team discussion. We believe the alternatives consider a wide range of issues.

Response to Public Comments

3g. Page 2-9; Alternatives other than the three listed as eliminated from detailed study should have been included in this section. (SCS)

FS Response: Without specific examples of the alternatives that represent “alternative paradigms for the timber industry” we can not respond specifically to your comments. The alternatives that were listed as eliminated from detailed study, were those major alternatives that had been developed and considered during the early stages of alternative development, but were subsequently eliminated from detailed study.

3h. Please do not build the proposed new road and LTF in VCU 301 (Lisa Creek). If access to this timber is absolutely necessary, use the existing road and LTF as proposed in Alternative 2. (EJ)

FS Response: Comment noted and considered.

3i. There were many public comments received that supported one or more alternatives, or did not support one or more alternatives.

FS Response: All of these comments were noted and considered.

3j. The FS has never seriously considered a no-action alternative for a timber sale plan. (SCS)

FS Response: Projects are proposed and developed to meet specific purposes and needs. In project-level planning many ideas are considered for meeting these purposes and needs. Projects that are patently unviable are not considered past these initial stages and are dropped from consideration. This may occur before the public is even aware of the project’s existence. By the time the FS presents a proposed project to the public, it has gone through several internal formulation and review sessions. As projects progress through the planning stages, portions of the projects, and sometimes entire projects, are dropped as more information becomes available. Project proposals which would likely result in the selection of the no-action alternative are not actively pursued because they would require expending time and money with little chance of meeting the purpose and need. By the time a project reaches the stage where a record of decision is to be published, it would be unlikely the no-action alternative would be chosen by the decision maker unless new physical information were to become available or changing social/political considerations were to override the original purpose and need. The no-action alternative, although not often chosen, is still a viable option in a NEPA decision.

4. Desired Conditions

4a. Chapter 3 has failed to adequately describe the existing condition of the Project Area. As a result, the foundation for predicting the future is missing. Therefore, the ability to suggest a desired condition does not exist. (SCS)

FS Response: As described in Chapter 1 of the Draft EIS, the desired condition for the Northwest Baranof Project Area is based on management direction contained in TLMP, as amended, and in the Alaska Regional Guide. It was designed to be a vision of what the landscape will be like in the future. Furthermore, the description of the Affected Environment in Chapter 3, is adequate for the purposes of that chapter.

4b. Writing desired future conditions as if they already exist is confusing to this reader. In addition, the statements are not specific enough, nor do they quantify important relationships, and are otherwise “similarly flawed.”(SCS)

FS Response: As described in Chapter 2 of the Draft EIS, the desired condition statements were intended and written to be a vision of what the landscape will be like in the future. This approach was best met with the statements being written as if the conditions already exist. We are sorry that this was confusing to you, we will continue to explore various methods for describing the desired condition in future projects. In addition, as described in Chapter 2, we designed these statements at a scale to be specific enough to meet Forest Plan direction, but flexible enough to provide some space for future management decisions.

5. Scoping and Issues

5a. The Draft EIS does not present information and analysis we requested during scoping. The scoping process for this project was flawed. A large number of significant issues raised during scoping were not identified and addressed by the ID Team. Scoping comments were not fairly and thoroughly analyzed. (ADF&G, SCS)

FS Response: We disagree. All scoping comments were reviewed and incorporated where appropriate in the Draft EIS. For example, many Sitka residents expressed concern about logging and road construction in VCU 300. In response to this concern, three of the five alternatives propose no activities in VCU 300 (Alternatives 2, 3, and 5). Alternatives 3 and 5 address scoping comments which expressed concern for all areas close to Sitka. Scoping comments revealed less concern over the areas surrounding Rodman Bay; therefore, Alternatives 2, 3, and 4 concentrate more harvest in that area.

5b. The Draft EIS does not adequately evaluate or follow up on issues. (EPA)

FS Response: Chapter 2 of the Draft EIS contained a comparison of alternatives by issue. The information provided in this section is based on information presented in Chapter 4. Chapter 4, Environmental Consequences, discusses the specific environmental impacts of each of the alternatives. It is important to remember that the Council on Environmental Quality regulations require EISs to be analytic rather than encyclopedic. Impacts shall be discussed in proportion to their significance. EISs shall be kept concise and shall be no longer than absolutely necessary (normally less than 150 pages). The EIS is a disclosure document as well as a tool used by the decision maker (in conjunction with other relevant material) to plan actions and make decisions. Furthermore, please recognize that not all material will be included in Chapter 4. Some material such as mitigation, unit cards, and road cards are located in the Appendices. Some material is located in the planning record.

5c. Definitions of key terms used in the Draft EIS virtually guaranteed that issues raised in public scoping would not be addressed fairly. (SCS)

FS Response: We are sorry you feel that way. The definitions in the Glossary are standard definitions. In addition, terms such as “harvest” are in common usage and reflect common definitions in dictionaries, silviculture text books, forest management text books, logging text books, and in FS manuals and handbooks. We are not in a position to create new definitions for common terms.

6. Ecosystems Management

6a. Page 2-8, EM approach should include addressing the entire island, or all of Southeast Alaska, for some species (goshawk, murrelet). (USDI)

FS Response: This is beyond the scope of the project. The larger scale required for some species is addressed at the forest plan level.

6b. Page 3-1; Discuss only the Affected Environment in Chapter 3. Discussion of ecosystem management is more appropriately handled elsewhere. Use a consistent definition of ecosystem management throughout. (SCS)

FS Response: The brief statement on ecosystem management in Chapter 3 leads into the discussion of ecological function and processes. It helps define why these processes are described for the Affected Environment in Chapter 3, rather than only individual resources. The only definition of ecosystem management used in this document is discussed at the beginning of Chapter 2, and summarized in the Glossary.

6c. The definition of ecosystem management in the Draft EIS lists “economic interactions” before ecological, indicating a greater importance for the former. (SCS)

Response to Public Comments

FS Response: We do not agree that what is listed first in a series is necessarily the most important. In Chapters 3 and 4 of the Draft EIS, Economic and Social values are the last resource discussed. Geology, soils, and vegetation are discussed before fish, wildlife, and subsistence. The order in which each resource is discussed in no way reflects preferences, nor does it place greater importance on one resource over another. Furthermore, the discussion of ecosystem management is based on direction from the Chief of the Forest Service.

6d. Page 2-7; Add maintenance of natural character, health, and stability of the ecosystem to discussion on interdisciplinary analysis. (SCS)

FS Response: Thank you for your comment. We agree that adding health is appropriate and the change has been made in the document. However, it is not necessarily our goal to provide "maintenance of natural character of the ecosystem". Maintaining the health of the ecosystem is important and usually accomplished by management activities that attempt to reflect natural processes. But management objectives for the area are for multiple use and do not always coincide with maintaining natural character. Furthermore, we are comfortable that the brief discussion of the interdisciplinary process that is presented in Chapter 2 is adequate for the purpose for which it was intended.

7. Clearcutting

7a. Clearcutting is a damaging practice for the long-term health of a forest. The Draft EIS does not address this. (RBB, WC, BA, ME)

FS Response: The Northwest Baranof Project has the highest percentage of overstory removal, seed tree cut, and group selection of ANY timber sale project on the Tongass National Forest to date. Clearcutting, proposed for less than half the harvest acres in any of the action alternatives, is an appropriate silvicultural system and harvest method for the forests of Southeast Alaska. Application of a specific silvicultural system is dependent on (1) the biological characteristics of the trees involved such as their requirements for light, water, nutrients, and growing space; (2) biotic and abiotic characteristics of the environment that affect regeneration and growth; (3) management objectives for the stand or forest in question; and (4) economic considerations.

There are many biological reasons for using a clearcutting silvicultural system within the forests of Southeast Alaska:

1. Most old-growth stands in Southeast Alaska are in climax or near-climax successional condition. They are generally higher in defect and lower in vigor than younger stands. Clearcutting of old growth followed by regeneration of a new stand will have greater potential to improve stand vigor and growth than other harvest methods.
2. Clearcutting allows more solar radiation to reach the forest floor, thus raising soil temperature and hastening biological decomposition of the thick organic mat. Large quantities of plant nutrients are tied up in the organic matter, and these are made available to plants only through decomposition, a process that is temperature dependent.
3. Windthrow can be a serious problem which increases when stands are opened up by partial cutting. Clearcutting disturbs less area for a given amount of timber removed than does partial cutting. Large openings expose less timber edge per unit area of harvest, and there is greater flexibility provided for selecting more windfirm cutting boundaries.
4. Clearcutting is the most effective means known for eliminating dwarf mistletoe. Many old-growth stands contain western hemlock trees heavily infected with dwarf mistletoe. Clearcutting and removal of infected residual trees reduces the chance for infestation of the future stand. The problem of reinfestation from trees around the perimeter of the harvest unit is minimized by cutting large areas.

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5. Clearcutting generally assures a higher percentage of Sitka spruce regeneration, a desirable timber species that is less shade-tolerant than hemlock. In addition to its economic importance, spruce adds diversity to stands and helps promote stand development.

6. Western hemlock and Sitka spruce have thin bark and are subject to logging damage and subsequent wound infection. Clearcutting reduces the potential for injury, infection, and substantial loss of forest health due to decay.

7b. Clearcut logging should not be considered in the Sitka local-use area. The FS must consider in detail alternatives which do not include clearcutting. (EJ, AC, JC, AS, ME, KK, JE, LB2, CJ, RBB, SCS)

FS Response: The Northwest Baranof Project has the highest percentage of overstory removal, seed tree cut, and group selection of ANY timber sale project on the Tongass National Forest to date. Clearcutting, proposed for less than half the harvest acres in any of the action alternatives, is an appropriate silvicultural system and harvest method for the forests of Southeast Alaska. Application of a specific silvicultural system is dependent on a variety of biological, physical, economic, and social factors as well as Forest Plan, landscape, and unit objectives. Each proposed harvest unit was analyzed based on these factors and objectives and a specific harvest method was recommended (See the Integrated Silvicultural Diagnosis for each unit in Appendix P). Since this harvest method is based on factors and objectives that do not change from alternative to alternative, the harvest method itself does not vary from alternative to alternative.

Furthermore, the application of clearcutting to a specific harvest unit is guided by FS policy and direction to reduce clearcutting on National Forests. Clearcutting is limited to areas where it is essential to meet Forest Plan objectives and involve one or more of the following circumstances:

1. To establish, enhance, or maintain habitat for threatened, endangered, or sensitive species.
2. To enhance wildlife habitat or water yield values, or to provide for recreation, scenic vistas, utility lines, road corridors, facility sites, reservoirs, or similar development.
3. To rehabilitate lands adversely impacted by events such as fire, windstorms, or insect and disease infestations.
4. To preclude or minimize the occurrence of potentially adverse impacts, or insect or disease infestations, windthrow, logging damage, or other factors affecting forest health.
5. To provide for the establishment and growth of desired trees or other vegetation species that are shade intolerant.
6. To rehabilitate poorly stocked stands due to past management practices or natural events.
7. To meet research needs.

7c. Page 3-78; Opposition to clearcut logging and support of a small wood products industry are not inconsistent, as suggested by the wording in the Draft EIS. (SCS)

FS Response: This sentence, this paragraph, and this section on social values address the fact that there is considerable public debate about the values and management of the Tongass National Forest. It points out that a single individual as well as groups of individuals may have varied and conflicting values, opinions, and ethical stances. As stated in the paragraph questioned, "Proposals for logging in areas close to Sitka have raised local interest, sentiment, and debate about what mix of values the forest should provide." These issues and concerns are not simply "black or white", "yes or no". There is a full spectrum of values and views, that need to be addressed. This is the reason that there are no simple answers to these difficult issues.

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The specific sentence in question states “Although it appears that many in the community support a small timber industry to diversify the economy of Sitka, there is also considerable opposition to clearcut logging in areas considered to be in Sitka’s “backyard”.” This sentence simply reiterates the complexity of the issues surrounding logging in the Sitka area. In fact, the results of the recent election in Sitka confirm this complexity with the proposition to seek the establishment of a wood product industry passing with a 67 percent margin, and the proposition to oppose clearcutting defeated in a very close vote.

7d. Clearcut logging destroys natural habitat for wildlife. (HK)

FS Response: Clearcutting is a harvest method used in even-aged silviculture that usually removes all merchantable trees over a specific diameter from an area at one time. Clearcutting, like similar natural processes, result in a significant change in the habitat for wildlife in the area where it occurs. However, this change in habitat affects different wildlife in different ways. Obviously, this change will adversely affect wildlife solely dependant on the characteristics of mature old-growth forests. This change, on the other hand, may be beneficial for wildlife that use openings, clearings, and shrubland. This change in habitat will also vary through time as the stand renews itself. The question is not the application of clearcutting but the extent to which clearcutting is applied in a given area.

7e. Clearcut logging is in direct conflict with tourism. (JC, STA/BC, NJ)

FS Response: If clearcutting were applied in areas that were visually sensitive and could be seen from major travel routes or other areas frequented by tourists, it could have an effect on their experience. This would be particularly true if the clearcutting occurred in the visual foreground, and if the cutting units were very large or located and shaped in a manner that made them noticeable.

However, this is not the case for the Northwest Baranof Project. Most clearcutting will occur in areas that are removed from or hidden from major tourist routes. Most clearcutting will occur in small units or are located and shaped in a manner that blends them in to the surrounding vegetation. Particular care has been taken to minimize the affect of the proposed activities on the scenic quality that is important to both residents and tourists alike.

Furthermore, it would seem that even some level of visual impact from clearcutting will not have a major effect on tourism. Many of the forests in the Sitka area have been harvested in the past with the use of the clearcut harvest method. This has occurred in and adjacent to the city of Sitka, in Redoubt Bay, and to the north of Sitka all the way to Chatham Strait. Many of these clearcuts used practices that are not appropriate today, and as a result may have an impact on the scenic quality. Sitka continues to be a popular tourist destination, even with its surrounding clearcuts, rock pits, and industrial zones. It would seem that clearcutting is not in direct conflict with tourism, as much as the extent and specific location of the actual harvest.

7f. Clearcut logging is not a cost-effective or sustainable style of timber industry. (BA)

FS Response: Clearcutting is an appropriate silvicultural system and harvest method for the forests of Southeast Alaska. There are many biological reasons for using a clearcutting silvicultural system within the forests of Southeast Alaska. There are also economic reasons for utilizing clearcutting. With the relatively low value of Alaskan timber and the high costs of logging, transport, and manufacture, clearcutting is probably the only system efficient enough for large-scale timber harvesting unless subsidies are granted. Clearcutting removes the greatest volume of timber within the least amount of affected acres. The clearcutting harvest method is the most efficient method of removing the timber.

Sustainability is a separate issue from cost-effectiveness. A sustainable industry is based on a continuity of resources, a continuity of production, and a continuity of yield. Continuity of resources is, in turn, based on the source of the resource. If the resource, in this case quality timber, can be secured from a wide range of sources over a large distance, then the availability of timber in any one area at any one time is less important.

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7g. Alternatives to clearcutting should not be used until they have been tested both economically and silviculturally. (GSW)

FS Response: On June 4, 1992, the Chief of the FS signed a policy that established an objective to reduce clearcutting on National Forest System lands and make greater use of individual tree selection, group selection, green tree retention, shelterwood, seed tree, and other regeneration cutting methods. This policy would reduce clearcutting where it has been used as a standard timber harvest practice on the National Forests. Clearcutting would be limited to areas where it is essential to meet Forest Plan objectives and involve one or more specified circumstances.

7h. Many of the impacts of clearcutting are positive. (VLN)

FS Response: Comment noted. Please refer to the “clearcut with reserves” section in Chapter 2 and to other responses in this section.

7i. Clearcutting/patch cutting reduces number and spread of areas temporarily disturbed, and reduces exposure to blowdown. Add information on windthrow, including the unraveling effect of leave areas adjacent to clearcuts and roads. (FJN, ADF&G)

FS Response: It is true that to obtain a given amount of volume, less acres would be disturbed using clearcutting methods. This would decrease the amount of area impacted. The occurrence and severity of blowdown is related to the location, shape and size of openings in the forest. Units can often be designed with shapes and sizes that minimize blowdown, however the silvicultural methods may also contribute. Large clearcuts do not leave exposed residual trees susceptible to blowdown but they can cause increased wind turbulence blowing down the edges of the unit. Smaller clearcuts expose more edge for a given acreage to wind, but the smaller openings do not promote an increase in wind velocity. Clearcut with reserves is often the desired silvicultural method in areas of high blowdown potential to minimize the loss of the residual stand (refer to page Chapter 2). The alternative (other than clearcut with reserves) silvicultural prescriptions may increase exposure to blowdown in some cases. Overstory removal usually retains smaller, more flexible trees that are less likely to blow down. These units may thus act similarly to clearcuts by exposing the unit edge to wind but the residual trees may actually slow the wind velocity. Seed tree methods may result in blowdown of the residual trees. In some cases, leaving the reserve trees in clumps may reduce these effects. Group selection is designed to mimic blowdown patterns (refer to “Group Selection” in Chapter 2). Most of these alternative prescriptions have not been implemented in Southeast Alaska, therefore actual comparisons are unknown. Roads can increase blowdown depending on the direction of the prevailing wind relative to the road direction and topography.

8. Monitoring and Mitigation

8a. Include a feedback mechanism which relies upon monitoring so that standards and guidelines, BMPs, standard operations, and timber sale administration are adjusted when effectiveness monitoring indicates a need. (EPA)

FS Response: This mechanism is in place. The reason we do monitoring is to update our procedures to make them more effective.

8b. Discuss how validation monitoring will be conducted in the Project Area. (EPA)

FS Response: See discussion of Monitoring at the end of Chapter 2. No validation monitoring is identified in this EIS.

8c. Page 4-28; Describe mitigation measures in greater detail. (SCS)

FS Response: See Appendix A Mitigation Measures.

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9. Proposed Action vs. Preferred Alternative

9a. Page 2-9; The public was misled by the NEPA terminology used to identify the “Proposed Action” and “Preferred Alternative.” (ADF&G, FPCP, LMS, SCS)

FS Response: The proposed action is a proposal that a federal agency agrees to analyze and it serves as a starting point for alternative development. The Council on Environmental Quality regulations for implementing NEPA states that a proposal exists at that stage in the development of an action when an agency has a goal and is actively preparing to make a decision on one or more alternative means of accomplishing that goal. The proposed action is presented to the public during the scoping process and is required to be displayed in the EIS. The preferred alternative is the alternative which the FS believes would fulfill its mission and responsibilities, considering economic, environmental, technical, and other factors. The preferred alternative was identified by the decision maker, after reviewing the five alternatives including the proposed action. This procedure allows for the decision maker to select an alternative other than the one that initiates the NEPA process as a result of reviewing the comparison of alternatives and the environmental consequences.

The identification of the FS’s Preferred Alternative was inadvertently left out of the Draft EIS Summary. On September 14, 1995, Forest Supervisor, Gary Morrison, sent a letter clarifying that Alternative 2 is the Preferred Alternative and extending the end of the comment period from October 2 to October 16, 1995.

9b. The Draft EIS Summary document did not identify the FS’s Preferred Alternative and was misleading to the public. The FS should correct this omission and the comment period should be extended. (LS)

FS Response: As soon as this omission was discovered, the comment period was extended.

10. Karst, Caves, and Minerals

10a. The ID Team did not adequately investigate the karst area found in the Project Area. Therefore, the claim that no activity occurs within 2.2 miles of this area is invalid. (MHD, FPCP):

FS Response: In the caves section of Chapters 3 and 4 we state that the only karst area found within the Project Area is located on an exposed carbonate ridge between Fish Bay and Nakwasina Passage. Approximately 50 percent of this ridge was surveyed. The remaining portion of this ridge was not surveyed because it was located in an area deferred for logging due to potential inclusion as a Habitat Conservation Area. This ridge lies 2.2 miles from the nearest proposed logging unit.

10b. Did the FS conduct field reconnaissance of all units for karst? (SEACC)

FS Response: Most units received field review by the Ground Reconnaissance Inventory Team (GRIT), silviculturists, or other resource specialists. Although many of the field reviewers may not have been specialists in geology or karst features, all were aware that karst features encountered during field review should be reported to the Forest Geologist for further investigation. No karst features were found within 2.2 miles of the nearest proposed logging unit.

10c. “We do not believe this timber sale will have major effects on the mineral resources of the Project Area, and may benefit new mineral exploration. Proposed roads may improve accessibility and new road cuts could reveal mineralization not otherwise exposed.” (USDI-36)

FS Response: Comment noted and considered.

10d. Page 3-5; Add summary of any mineral activity tracts in or near the timber sale area. (USDI)

FS Response: Please see the Geology section of Chapter 3.

11. Soils and Watershed

11a. Identify specific sites in need of restoration due to impacts from past logging activities, such as slope and road failures and culverts that are inadequate to provide fish passage. Account how further degradation of Rodman Creek and Nakwasina River will be avoided. (EPA, USDI)

FS Response: Sites that have been identified as needing restoration either from past logging activities or natural occurrences (slides, floods, windthrown timber, etc.) will be considered for restoration in the action alternatives in which they are found, using the BMPs that are appropriate. BMPs will be followed during any harvest and road construction activities in the Rodman Creek and Nakwasina River drainages to avoid further degradation of these drainages.

11b. Channel stabilization work is needed in Fish Bay Creek (VCU 287) where the creek is carving a new channel through the alders. Are any watershed restoration projects being proposed for the Project Area? Discuss. Were any watersheds in the Project Area considered for designation as “reference” watersheds? Page 3-20; Discuss in site-specific detail the effects of past logging on fish habitat and water quality. Further evaluate the impacts from road construction to water quality and fish habitat. Add measures to ensure that culvert and bridge failures do not occur and that corrective actions are made immediately to minimize impacts to water quality and fish habitat. (EJ, EPA, DEC, SCS)

FS Response: There are no designated “reference” watersheds within the Project Area. Fish Bay Creek is one of several Northwest Baranof watersheds scheduled for a watershed improvement needs inventory (WINI). The Sitka Ranger District 5-Year Fish, Wildlife, Watershed, Ecology and Subsistence Program Schedule lists Fish Bay, Nakwasina, Noxon, Rodman, Starrigavan, and Adams Creeks among priority watersheds for inventory and possible restoration. Specific needs, such as the channel instability referenced at Fish Bay Creek, would be addressed during the WINI. Complex floodplain channels are characterized by channel instability over time. These are natural, ongoing processes of adjustment to changing energy flows, although management activities can alter and exacerbate natural processes. The scale and effect of disturbance must be balanced against the cost of improvement. Restoration efforts focus on cost-effective solutions.

11c. Acknowledge and address past management failures (including topsoil depletion, erosion into fish streams, loss of winter wildlife habitat, and loss of timber productivity due to soil puddling) in extensive riparian areas of Rodman Creek, Adams Creek, Duffield Valley, Fish Creek, East Nakwasina and Noxon Creek. Page 4-17; Discuss in detail the cumulative watershed effects related to streamflow, particularly for VCUs 291 and 292. (MHD, DEC, SCS)

FS Response: Please see response to 11b. An inventory of Project Area fisheries resources was completed and the results of this inventory are discussed in the Fish and Water section of Chapter 3. The complete inventory report is on file in the Project planning record.

11d. Page 4-7; We believe the statement that slope failures taper to near stable conditions within 15 years of harvest is incorrect. (SCS)

FS Response: We disagree based on current soils research.

11e. Harvest units are planned on slopes adjacent to heavily damaged riparian areas (particularly around Adams Creek and Rodman Bay), exacerbating existing erosion and instability. (MHD)

FS Response: Unit boundaries and road locations were modified and/or prescriptions developed where necessary to protect adjacent sensitive areas.

11f. Unit 9031 is on a steep slope near an unbuffered Class III stream. This is dangerous. (CAJ)

FS Response: This is addressed in the Fisheries section of the Unit Card for Unit 9031.

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11g. The IRI Mass Wasting Interpretation, cited frequently in the Draft EIS, contains serious errors. (MHD)

FS Response: The interpretations cited in the Draft EIS apply to the Common Land Unit (CLU) polygons that were mapped as part of an Order 3 Inventory. Minimum polygon size for an Order 3 map unit is about 10 acres. Inclusions of soils that are different from the dominant soils that make up the map unit are permitted. These inclusions may have different interpretations than the major part of the map unit. Errors in mapping may have also occurred in some instances. The inventory was designed for project planning at the watershed level, however, not for project implementation or design. That is why we try to do a field review of every potential unit. The Mass Wasting Interpretations referred to in the Draft EIS were derived from GIS but potential problem areas were reviewed in the field. Hazardous areas were either deleted or prescriptions were made to mitigate potential adverse impacts.

11h. Table 3-2; Display soil types for only the unit and road pool and for each alternative rather than for the entire Project Area. Discuss soil hazard ratings, landslides, and windthrow specific to watershed. Discuss landslide and windthrow hazards in Chapter 4 as well as Chapter 3. Include mitigation proposed to address these factors. Page 3-13; Add information on past landslides in the Project Area, including the number, location, size, and elevational drop. Discuss further the MMHaz ratings and absolute level of risk by alternative. Address scoping comments on soils and hazardous soils. (ADF&G, DEC, SCS)

FS Response: Chapter 3 represents the affected environment as it currently exists; it is not intended to show unit, road, or alternative specific information. Unit, road, and alternative specific information is presented in Chapter 4. The soils section of Chapter 4 displays proposed units and roads in the High Mass Movement Class (MMHaz3) by VCU and by alternative. VCU boundaries roughly correspond to watershed boundaries. Relative risk of each alternative can be deduced from these displays. Mitigation measures are outlined in Appendix A. Soil hazard information has been mapped and is included with the Soils Resource Report in the planning record, and water quality issues relating to sedimentation were identified in the Fish and Water section of Chapter 4. Best Management Practices (BMPs) are expected to protect water quality under all alternatives.

11i. Page 3-19 The statement "Most rivers...show no apparent impact from past human activities" is misleading. (ADF&D)

FS Response: The full text of the sentence, particularly with the rest of the paragraph, is accurate. We agree that the statement is misleading the way it was quoted out of context and with only a portion of the sentence.

11j. The Draft EIS does not address storm rainfall. (MHD)

FS Response: High rainfall is a Southeast Alaska climatic feature. We infer the issue is mass failure and not rainfall in this comment. High mass movement risk areas are identified through soils mapping and ground reconnaissance. Most high hazard areas are avoided in harvest units and road locations.

Logging activities are suspended during periods of intense rainfall to avoid triggering landslides. The Chatham Area Best Management Practices address this resource issue of landslides. See the following in Soil and Water Conservation Handbook (FSH 2509.22): BMP 13.2, Timber Harvest Unit Design; BMP 13.4, Timber Sale Operating Schedule; BMP 13.5, Identification and Avoidance of Unstable Areas; and BMP 14.7, Measures to Minimize Mass Failures.

11k. According to the AFHA report, we believe the BMPs currently recommended for the Tongass do not adequately protect fisheries habitat because of incomplete implementation of current procedures and the need for additional direction for fish habitat protection. (USDI)

FS Response: Additional fish habitat protection direction was issued on November 21, 1995, in a letter from Regional Forester Phil Janik to the Forest Supervisors. The Regional Forester's letter addressed fish habitat protection concerns stated in the Anadromous Fish Habitat Assessment (AFHA) report, January 1995. The Soil

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and Water Conservation Handbook, which contains BMPs, is currently under review for an update. The existing BMPs were developed jointly with the Alaska Department of Environmental Conservation with the intent to meet or exceed State water quality standards and to comply with the Clean Water Act. It is beyond the scope of the Northwest Baranof EIS to address Regional direction for fisheries habitat management or unilaterally change BMPs. Fish habitat protection measures and BMPs were established for each unit and road according to current policy and direction. Unit and Road Cards may be reviewed in the Final EIS Appendices.

11l. Discuss AFHA findings, acknowledge that BMPs may not be fully implemented, recognize that even if BMPs are implemented they may not be fully effective at protecting anadromous fish habitat, and discuss implementation and effectiveness monitoring of prescribed BMPs. (USDI, RR, SEACC)

FS Response: Implementation monitoring is done to determine whether necessary BMPs, mitigation, constraints, and decisions were actually applied to an activity as planned. It is the responsibility of timber sale administrators and engineering representatives to track planned BMP implementation on every unit and road in the sale. In addition, a minimum of 20 percent of the units harvested and roads constructed during the operating season are monitored again by a team generally including the sale administrator, engineering representative, and a hydrologist and/or fisheries biologist. In addition to a check on compliance, this minimum 20 percent sample is a time to review the sale process from planning, through layout and implementation to see that all appropriate BMPs were planned and implemented, or to identify where any part of the process provided less than full protection and implementation. An annual monitoring report to ADEC documents BMP implementation monitoring, and discloses the degree of protection and remedial actions that were taken when impacts from management activities were detected.

Effectiveness monitoring seeks answers about the effectiveness of BMPs in protecting water quality and beneficial uses. Effectiveness monitoring is conducted on the Chatham Area of the Tongass National Forest, including the Sitka District, for road drainage structures, landslides, buffer strip stability (blowdown occurrence), and buffer effectiveness in maintaining riparian and aquatic habitat capability and water quality. Effectiveness monitoring is conducted by the Stikine and Ketchikan Areas on additional issues. Copies of the approved effectiveness monitoring procedures are available from the Chatham Area Supervisor's office upon request.

11m. Include analysis of the probabilities of increased sediment delivery to stream habitats and negative impacts on salmon spawning and rearing habitats due to road construction, use, and maintenance, and slope failure in areas of unstable soil. Describe LWD depletion and related problems and specify where in the Project Area the opportunity provided by logging and road building will be used to rehabilitate roads and streams. (USDI)(ADF&G)

FS Response: An sediment risk analysis of Project Area was completed and the results of this analysis are discussed in the Fish and Water section of Chapter 4. The complete Hydrology Effects Analysis Report is on file in the Project planning record.

11n. Discuss road construction and timber harvest in riparian areas in light of AFHA recommendations. What decision criteria were used to allow activities in riparian areas? Provide adequate riparian protection for first- and second-order streams to minimize downstream impacts to water quality and aquatic habitat. Clarify protection measures in riparian areas for Class III streams. Thoroughly discuss buffer protection for lakes and ponds. Depict riparian buffer areas on unit and road cards. (DEC, EPA)

FS Response: The AFHA recommendations were considered but they do not prohibit activities in this area. See Road and Unit Cards (Final EIS, Appendices N and O). Inventories of Project Area fish, water, and soil resources were completed and the results of these inventories are discussed in Chapter 3. The complete reports are on file in the Project planning record.

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11o. Discuss how stream temperature, dissolved oxygen, or stream nutrient cycles will be monitored. (EPA)

FS Response: We have no plans to monitor stream temperature, dissolved oxygen, or nutrient cycles. Temperature and dissolved oxygen studies have been done on the Ketchikan and Stikine Areas, where there have been documented fish kills during prolonged summer droughts. Fish kills were due to high stream temperatures or low dissolved oxygen.

11p. Assess and evaluate the site-specific effects of timber harvesting and road construction on other water-quality criteria such as temperature, turbidity, dissolved oxygen, water chemistry and bacteria, to ensure compliance with the Alaska Water Quality Standards. (EPA)

FS Response: TTRA buffers and BMP implementation will limit measurable effects on turbidity to unavoidable short-term impacts (e.g., culvert installation) or to unplanned, catastrophic events (e.g., landslide, large scale blowdown). There should be no measurable effects on dissolved oxygen, temperature or nutrient cycles barring a catastrophic event. Unit boundaries and road locations were modified in the planning stages and/or prescriptions made to protect areas subject to landslides or blowdown. TTRA buffer strips are a "minimum" of 100' and are often extended where necessary to protect water quality from blowdown. Buffers were also required on some Class III streams as per BMP 13.16.

11q. Quantify "large volumes" and "small volumes" regarding drainages (culverts or bridges). (EPA)

FS Response: Quantifying these terms would depend on what question is being evaluated.

12. Old-Growth Retention

12a. Display old-growth retention areas. Include old-growth retention blocks as directed by the 1979 TLMP. Discuss the use of retention areas and identify their locations. (ADF&G, USDI, SEACC)

FS Response: Refer to the ROD Map for a display of old growth remaining in the Project Area. Areas identified for wildlife retention (discussed in Chapter 3, Old Growth section) are located within these old growth sections.

12b. Old-growth forest within the Project Area must be protected. It is too soon to cut remaining old growth in Northwest Baranof. (HK, MCG, TG, AC, AS, PE, CEW)

FS Response: Refer to the Vegetation section in Chapter 4 for a comparison of remaining old growth by alternative. The Vegetation section in Chapter 3 discusses where old growth will be maintained for wildlife habitat. The decision on entering the Project Area for timber harvest is discussed in Chapter 1.

12c. Table 2-9; State what year the remaining old-growth acres represent. (USDI)

FS Response: These values are a current condition (1994) and what would occur immediately following the completion of each alternative.

12d. Page 3-10; Quantify the percentage of CFL in the Project Area which is old growth. (SCS)

FS Response: There are 51,651 acres of existing old growth and 63,981 acres of commercial forest land within the Project Area. This equates to approximately 81 percent of the CFL land that qualifies as old growth.

12e. Page 3-10; Discuss benefits of old growth to wildlife. We believe that old-growth stands are at a steady state in terms of commercial quality, rather than declining, as stated in the Draft EIS. (SCS)

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FS Response: Refer to Chapters 3 and 4 for discussion on the benefits of old growth to wildlife. The commercial quality of old growth varies by site condition. The document was edited to reflect this. Thank you for your comment.

12f. Page 4-8; Modify the text to show that remaining old growth in the Project Area would range from 75.8 percent to 78.2 percent under the action alternatives. (SCS)

FS Response: The text was correct as stated. However, the text has been revised to reflect a more accurate statement of effects. The No Action Alternative maintains approximately 81 percent of the old growth acres that existed in 1954. The action alternatives retain between 76 and 78 percent of the 1954 acres. This equates to a range of 94 percent to 97 percent of the current old growth acres.

13. Floodplains, Wetlands, and Riparian Areas

13a. Page 3-14; Describe the proportion of floodplains, wetlands, or riparian areas which have been impacted by harvest and roadbuilding. Address cumulative impacts on wetlands and goals of Executive Order 11990 and how they will be met. (USDI, ADF&G)

FS Response: We outline the objectives of Executive Order 11990 in Chapter 3, under Floodplains, Riparian Areas, and Wetlands. Timber harvest will have some impact on wetlands, and roads in wetlands cannot always be avoided. We meet the intent of Executive Order 11990 by avoiding planning roads across, or planning units within wetlands whenever practical. Although wetland loss may occur through road construction, the techniques and measures include the use of permeable subgrade materials to avoid restricting the natural movement of water. They also include the frequent placement of culverts to allow water to pass freely. Additional information regarding cumulative impacts on wetlands has been included in Chapter 4 of the Final EIS.

13b. Page 3-18; Add site-specific information on the present condition of riparian areas within the Project Area. (SCS)

FS Response: See response to 11b.

13c. Page 4-19; Display acres of units and roads in riparian areas in addition to stream crossings. (SCS)

FS Response: This information was displayed in the Draft EIS on pages 4-13 and 4-14.

13d. Table 3-4; Add floodplains. (ADF&G)

FS Response: This information has been included in the Final EIS.

13e. The amount of harvested road construction and reconstruction proposed in wetlands and riparian, and on high-hazard soils, is unacceptable. (BF)

FS Response: Although we are not prohibited from logging or building roads across high hazard soils, we do try to mitigate adverse impacts to these areas. We attempted to field review every unit and road segment that was located on high hazard soils. We avoided known areas of extreme hazard soils, and a great many of the harvest areas were deleted from the unit pool and many road segments were dropped due to high hazard soils. In many cases helicopter logging was specified to either minimize logging damage or to eliminate the need for road construction. Many (perhaps most) of the unit boundaries were modified at some point in the review process to avoid hazardous areas. Likewise, many different potential road locations were reviewed to find the best route. Harvest prescriptions were specified to protect many units and road building requirements were specified to reduce potential adverse impacts. See also response to 13f below.

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13f. The Draft EIS does not protect wetlands and riparian areas. (CJ)

FS Response: Wetland areas in the Project Area are abundant. Effects on wetlands caused by unit harvest could range from none to altering the soil moisture regime, puddling, compaction, and to a smaller extent to soil displacement and erosion. Although harvest activities may temporarily alter the hydrology of a site until vegetation is re-established, units are seldom logged in such a way that prevents them from providing wetland attributes to the forest system. Wetland areas that were most susceptible to damage were eliminated from harvest consideration. Other wetlands are protected by specifying specific harvest measures which will limit disturbance. Although detrimentally altered wetness and wetland loss could occur through road construction, techniques and measures required during road construction, and those used to provide long service life on roads, generally tend to preserve the natural values and functions of the affected wetlands. These techniques and measures include the use of permeable subgrade materials to avoid restricting the natural movement of water and the frequent placement of culverts to allow water to pass freely.

The amount of new construction in riparian areas is very small. Every effort was made to avoid road construction in riparian areas, and road crossings were minimized. Where crossings are necessary, construction techniques will be prescribed which will minimize adverse impacts to riparian values. Some potential road locations which could have adversely affected riparian zones were dropped from consideration and others were relocated away from these areas. The effects of reconstruction of roads in riparian zones are considered to be minimal. Potential adverse effects will be mitigated by ensuring the use of proper techniques to minimize disturbance during construction (including timing of activity).

Acreage figures in the tables reflect the dominant characteristics of the map units as stored in GIS. Although a map unit may have a severe rating for some activity, it will frequently contain inclusions which do not have the same limitations (the reverse is also true). An example would be a bench on a steep hillslope. The steeply sloped areas may be very unstable but it may be possible to locate a road on a bench without causing adverse impacts. This also applies to wetlands. Many of the wetlands occur within map units that are classified as having mixed wetland/non-wetland soils. For the purpose of tabulating acreages for the tables, these areas were considered 50 percent wetland and 50 percent non-wetland. However, the portions of these units that were acceptable for harvest were determined by field review.

14. Fish

14a. Unit cards do not identify or address the special values of the 100 to 300 foot corridor adjacent to fish streams. (ADF&G)

FS Response: The integrity of TTRA buffers near timber units is important and is emphasized in the unit cards where appropriate. There is also more information contained in field notes in the planning record.

14b. Page 4-18; Discuss in detail the application of 100-foot stream buffers in the Final EIS and on the unit cards. (SCS)

FS Response: The Fisheries section of the unit and road cards reference all applicable BMPs and buffers, including where buffers are necessary for Class III streams, or for channels that were not mapped onto GIS. Prior to road or unit layout, a fisheries biologist flags all streams that require protection for fisheries or water quality. During project implementation, a streamcourse protection plan is completed for any instance where there is an unavoidable incursion into a stream buffer (e.g., when a road crosses a stream). The streamcourse protection plan for units or roads document additional site-specific BMPs, structural recommendations, hydrology data, fisheries data, in-stream construction timing window dates, and through contract administrators, is enforced as part of the operating contract.

The Region's TTRA stream buffer policy, and the Sitka Ranger District methodology for implementing that policy can be seen in the following documents: TTRA Stream Buffers (draft); Sitka Ranger District Implemen-

tation Methodology, November, 1993, and Stream Buffers and Classification (in a letter from Regional Forester Phil Janik to the Forest Supervisor's and Staff Directors, November 21, 1995).

14c. Logging destroys fish habitat; commercial fishing is one of Sitka's main industries. (STA/BC)

FS Response: Past logging and road building practices within the Project Area directly impacted fish habitat when logging to the stream removed woody debris that provided rearing habitat structure, and trapped spawning gravels; yarding over stream banks, exposure of mineral soils, and loss of root strength contributed to channel instability and sediment problems; operating on unstable soils triggered landslides, etc. Logging practices have changed dramatically since the area was harvested in the 1960's. BMPs and buffers restrict direct impacts to stream crossings and unplanned events such as blowdown or landslides. The focus of much of the planning effort is to remove areas from consideration for logging where mitigative measures cannot reduce the risk of resource damage, and to identify and protect resources in areas that will be managed. The passage of the Tongass Timber Reform Act and incorporation of BMPs ended the practice of logging to the stream bank, or pulling wood from the channels. Now all fish streams have to be protected down to the smallest, intermittent channel. The very small channels have been recognized for their importance to spawning and rearing fish, and receive the same protection measures as rivers. The effectiveness of current practices in protecting fisheries resources and water quality is the subject of considerable study and debate, but they are dramatically different from the forest practices that so impacted the riparian areas of Starrigavan Creek, Nakwasina River, Noxon Creek, Fish, Duffield, Adams Creek and Rodman Bay, etc.

14d. Recreational fishing should be better documented and quantified. (ADF&G)

FS Response: Recreational fishing effort within the Project Area is overwhelmingly focused on salt water. Sport harvest statistics on freshwater fishing effort in the Sitka area that are annually collected by ADF&G Sport Fish Division, lump Baranof systems other than Blue Lake and Lake Eva. In the absence of documented, quantifiable sport fishing data for the area, we relied on ADF&G sport fish biologist Art Schmidt to note the areas of importance to sport fishermen within the Project Area. Additional information has been added to the Hunting, Fishing, and Subsistence section of Chapters 3 and 4.

14e. Page 4-64; Discuss cutthroat trout as well as steelhead. (ADF&G)

FS Response: Little information is available on trout populations within the Project Area. FS biologists and ADF&G Sport Fish biologists have observed trout in streams throughout the Project Area, but not in large numbers. Snorkle surveys, minnow trapping and electrofishing observations occasionally yield a single fish amongst Dolly varden and/or coho. Art Schmidt of ADF&G Sport Fish Division, recently published a report documenting the abundance and size of cutthroat trout and Dolly varden char in thirteen small southeast Alaska lakes entitled, "**Size and Abundance of Cutthroat Trout in Small Southeast Alaska Lakes, 1993**". Two of the thirteen lakes, Buck Lake and Lake 436 (also known as Gen-Gen Lake, or C&B Lake), were within the Project Area. Cutthroat trout abundance was estimated within a range of 390 to 560 fish at Buck Lake (depending on the estimator model). No other fish were caught in Buck Lake. Both Dolly varden and cutthroat were captured in Lake 436. No population estimate was made for either species.

Art Schmidt conducted radio tracking experiments of adult cutthroat trout from Lake Eva during the spring of 1995 (unpublished data). Fish captured and released at Lake Eva were tracked to streams from Rodman Bay to the east side of Catherine Island. It appears that the large population of fish that rear in Lake Eva are dependent on many streams on north Baranof for spawning or other portions of their life cycle, including some very small streams that have not been mapped onto GIS

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14f. Display sport fish resources. (ADF&G)

FS Response: Sport fish resource maps for each VCU were included with the Fisheries Resource Report. A single map is included in the Final EIS to show the locations of streams and lakes with significant sport fish resources within the Project Area.

14g. Expand discussion on Threatened and Endangered fish. (ADF&G)

FS Response: Please see the discussion of the Endangered Species Act of 1973 in the Endangered Species Section of Chapter 3. The discussion on Threatened and Endangered fish is brief because no Federally listed Threatened and Endangered fish occur in or near the Project Area.

14h. Analyze whether the proposed barge LTF will impose negative impacts on the sablefish use area, and include mitigation measures. (USDI)

FS Response: The effect of the proposed barge LTF on the sablefish use area was not analyzed. The barge facility was selected as a mitigation measure over other designs that would place logs in direct contact with the water (e.g., slide, crane, or A-frame). This mitigation was in response to scoping comments by NMFS that St. John Baptist Bay was an important area for juvenile sablefish. Other mitigative measures, such as construction timing windows, may be incorporated as directed under terms of the Army Corps of Engineers permit after consultation with reviewing agencies, including ADF&G, USFWS, USEPA, ADEC, and ADGC.

14i. Page 2-13; Quantify potential impacts on fish habitat and water quality in this discussion. We disagree that potential impacts are minimal in all alternatives. Page 4-18; Include a qualitative evaluation of the potential direct, indirect, and cumulative impacts to water quality and fish habitat. (SCS)

FS Response: An analysis of Project Area effects on the fisheries resources was completed and the results of this analysis are discussed in the Fish and Water section of Chapter 4. The complete analysis report, which includes qualitative discussion of direct, indirect, and cumulative impacts, and quantifiable effects to riparian areas, wetlands and streams, is on file in the Project planning record. A sediment risk analysis was completed and is documented in the Hydrology Effects Analysis Report, which is also on file in the Project planning record.

14j. Page 4-18; Consider additional scientific information regarding salmon stream protection. (SCS)

FS Response: An inventory of Project Area fisheries resources was completed and the results of this inventory are discussed in the Fish and Water section of Chapter 3. The complete inventory report is on file in the Project planning record.

14k. Page 4-19; The impacts of units and roads in riparian areas to fisheries are not adequately evaluated. (SCS)

FS Response: See response to 11f and 11h. An analysis of Project Area fisheries resources was completed and the results of this analysis are discussed in the Fish and Water section of Chapter 4. The complete analysis report is on file in the Project planning record.

14l. Page 4-20; Include a summary of the BMPs cited or include the BMPs in an appendix. (SCS, EPA)

FS Response: BMPs are included in the Soil and Water Conservation Handbook (Forest Service Handbook 2509.22). There is no basis for including this type of information in the EIS.

15. Deer

15a. Previously logged areas have few deer. (FG)

FS Response: Deer populations have remained high in the Project Area over the last few years. Bag limits have remained high. More site specific information about particular "logged areas" would be needed to fully address this comment.

15b. Deer populations in the Project Area are already stressed from previous clearcuts. (AS, BA)

FS Response: At present, deer numbers are high, based on recent ADF&G harvest records. However, there is concern with future populations due to increased human demand, habitat reduction and previously harvested stands approaching canopy closure. Tree thinning may help maintain understory vegetation for a greater portion of the rotation.

15c. Table 3-6 (Wildlife habitat used by species) is grossly in error because it does not designate second growth as deer habitat. Deer actively feed in clearcuts up to 20 years and to 40 years if precommercially thinned. Nor does it designate second growth as brown bear habitat. Bears eat skunk cabbage roots in the spring and berries all through the fall in clearcut units. Page 3-26; Second growth was not marked as a preferred habitat for any species and this information was not carried over into Chapter 4. (MB1-2, MB1-3, SCS-89)

FS Response: While deer and bear use young second growth, it is not the *preferred* habitat of either species.

15d. Concerned about projected declines in deer populations as a direct result of old-growth logging. (LB2)

FS Response: There is evidence that logging old-growth forests may contribute to declines in deer populations. However, it is important to understand that other factors play a major role in the cyclic nature of deer populations, such as, but not limited to, winter severity, snow depth, and hunting pressure.

15e. Page 3-25; Add information on deer habitat requirements and display original and pre-large-scale logging acres of deer habitat in the Project Area. (SCS)

FS Response: This has been done in the Final EIS.

15f. Page 4-21; Add information regarding the Doerr study. (SCS)

FS Response: The Doerr study contained very good information and is available for review from the Project planning record. The concepts were used in the wildlife analysis .

15g. Address the effects of canopy closure on deer. (ADF&G)

FS Response: Information on this subject has been added to Wildlife section of Chapter 4 in the Final EIS.

15h. Units 9061, 9062, 9011, 9012, 9021, and 9022 take out important deer travel corridors. (ADF&G)

FS Response: This is true, if these units are included in the selected alternative. This will be considered in the decision.

15i. Preserve deer habitat. (MCG)

FS Response: Deer habitat is considered in the Final EIS and is maintained to the extent practicable while providing timber outputs.

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15j. Drop units 8061, 8062, 8063, 8064, and 8065 from consideration for logging. If logged at all, helicopter logging should be limited to February, March, June and July to avoid interference with fawning and hunting. (EJ-3)

FS Response: Comment noted and considered. If these units are included in the ROD, these recommendations will be considered during timber sale implementation.

15k. Demand for deer already exceeds the supply. (AS, RED)

FS Response: Based on the 10 percent harvest level of deer set by ADF&G, this is true. See the Subsistence section for details.

15l. Objects to any harvest units in VCU 300 as it is consistently and heavily populated with deer. (EJ)

FS Response: This is true, VCU 300 is a very important area for deer and this will be considered when the decision is made.

15m. Objects to any harvest units in VCU 302 as it is consistently and heavily populated with deer. (JCV, EJ)

FS Response: This is true, VCU 302 is a very important area for deer and this will be considered when the decision is made.

15n. Address viable long-term populations of deer for consumptive and nonconsumptive uses. Page 4-29; Include a discussion of maintenance of huntable, not just viable, wildlife populations. (USDI, SCS)

FS Response: That issue was addressed in Chapter 4, Hunting, Fishing and Subsistence section.

15o. Page 3-40, 81 percent of 1,439 hunters being successful does not equal the 552 successful hunters shown in the table. This puzzle is not explained, nor are the years of the hunter data given. (SCS)

FS Response: You are correct; 552 is not 81 percent of 1,439. However, 1,439 is the total number of Sitka hunters (as stated in paragraph 3 of page 3-40). The following sentence, which begins by stating "Within the Project Area WAAs..." clearly states that 895 hunters reported hunting in Project Area WAAs, and that over 60 percent were successful (552 is 61.67 percent of 895). The years of the hunter data are, in fact, given; the table heading specifically states that the information is provided for "Regulatory Years 1993-94."

15p. Page 4-21, paragraph 1, sentence 4; Statement is incorrect. Numbers do not represent the number of deer present in each WAA at any time. (USDI)

FS Response: Thank you, this has been corrected in the Final EIS.

16. Other Wildlife

16a. The Draft EIS relies too heavily on habitat capability models. Habitat capability must be analyzed by volume class. Habitat capability model outputs should not be compared to actual populations. The models must be updated using the latest available information. (SCS, USDI)

FS Response: Information on the use and limitations of habitat capability models has been added to the Wildlife section of the Final EIS. The models do account for volume class, but typically use groupings of volume classes for habitat analysis. More detailed information can be obtained upon request from the Project planning record and the Chatham Area GIS.

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16b. Page 2-13; Include habitat capability information for additional species (such as the marbled murrelet and brown creeper). (SCS)

FS Response: Habitat capability information for the brown creeper has been included in the Final EIS. Marbled murrelets were not included as a MIS but were assessed in the Biological Assessment/ Biological Evaluation in Appendix B.

16c. Add wildlife habitat capability models to Literature Cited section. (USDI)

FS Response: Thank you. This information has been added to the Final EIS.

16d. The Habitat Capability Index must fall within a numerical range of 0.0 to 1.0. On this scale, 0.0 represents no habitat suitability and 1.0 represents optimum suitability. Change table titles to reflect data presented. (USDI)

FS Response: Actually, habitat suitability is rated on a scale of 0.0 to 1.0. The models output habitat capability as "numbers of animals".

16e. Include percentages of past and projected changes in wildlife habitat capability tables. (USDI)

FS Response: This information is included in the Wildlife section of Chapter 4 in the Final EIS.

16f. Page 4-29; Describe in greater detail the long-term habitat capability decreases discussed. (SCS)

FS Response: Additional discussion is included in the wildlife sections in Chapters 3 and 4 in the Final EIS.

16g. Viable wildlife species populations must be addressed at the project level using best available science. (LMS)

FS Response: This information has been included in the Final EIS in the wildlife section.

16h. The text states habitat capability changes from 17 to 46 percent; Table 4-19 does not reflect this. Clarify. (USDI)

FS Response: This statement is not included in the Final EIS.

16i. How will wildlife populations in the Project Area be augmented in the future? (ADF&G)

FS Response: KV projects, such as precommercial thinning, may be used to create habitat diversity in young growth and even-aged riparian stands.

16j. Old growth provides winter range for wildlife species and should not be harvested. (TG)

FS Response: Old growth is a major component of winter habitat for many wildlife species. However, Chapter 1 has provided some information on why timber harvest may occur in the Project Area.

16k. The Draft EIS does not discuss the effects of overstory removal on wildlife. Page 4-21; Add an evaluation of cumulative impacts of group selection on habitat capability for deer. The proportion of this sale which uses ATC that would be of any measurable benefit to deer is very small. (ADF&G, SCS)

FS Response: This is a complex subject as effects vary between species. There is very little research available on this subject, especially in SE Alaska. There are some ongoing studies such as the Alternative to Clearcut research which is being conducted at Hanus Bay by the Forest Science Lab . These may help us understand these effects.

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16l. The Draft EIS cumulative effects analysis on wildlife is inadequate. Show effects of second-growth canopy closure 25-30 years after logging. (ADF&G)

FS Response: This information has been included in the Chapter 4 Wildlife section in the Final EIS.

16m. Define monitoring in previously roaded and logged parts of the Project Area, including mitigation measures planned (this is a fish, wildlife and watershed issue). (ADF&G)

FS Response: This would be incorporated in the planned monitoring for the Project. See Appendix A. An inventory of Project Area fisheries resources was completed and the results of this inventory are discussed in the Fish and Water section of Chapter 3. The complete inventory report is on file in the Project planning record.

16n. Units 1144-1147, 3011-12, and 3142-43 in Rodman are next to old clearcuts and would not allow wildlife travel corridors between high- and low-elevation habitat. (ADF&G, RR)

FS Response: If these unit are included in the selected alternative, this will be considered in the final decision.

16o. Analyze forest fragmentation and connectivity using at least a two-tree-length buffer around forest edges. Address forest fragmentation and its effects on viable wildlife populations. Page 2-14, Analyze patch size as in Polk Inlet EIS. Determine how much old-growth interior is present in the Project Area after subtracting a two-tree-length buffer around the edges of old-growth stands. (ADF&G, USDI)

FS Response: A patch size analysis and discussion of fragmentation have been included in the Final EIS.

16p. Analyze old-growth patch size, spatial distribution, and wildlife habitat effectiveness. (USDI)

FS Response: Refer to response above and to the wildlife sections in Chapters 3 and 4.

16q. Analyze more in-depth the cumulative effects on wildlife and fisheries, especially of past forestry management activities from the 1950s to the present. Page 4-23; Add data for wildlife habitat before large-scale logging occurred in the Project Area. The Draft EIS does not support conclusions of wildlife biologists that existing clearcuts will have a detrimental effect on deer and fish populations. (USDI, RBB, SCS)

FS Response: Refer to Chapters 3 and 4 in the Wildlife and Fish sections in the Final EIS. More detail is included in the wildlife and fish resource reports and the planning record.

16r. Pages 3-31 and 32; Add descriptions of wildlife and plant surveys (including dates, locations, methods, etc.). (USDI)

FS Response: Refer to Appendix B in the Final EIS.

16s. Harvest units rated 3, 4, & 5 for subsistence value should be removed from consideration because of projected impacts (negative) on wildlife habitat. (HC, ADF&G)

FS Response: This concern will be considered in the final decision.

16t. Modification of HCAs may threaten wildlife habitat. Explain how the HCAs identified in the Draft EIS are consistent with the recommendations of the peer review committee. (SEACC)

FS Response: As of November 15, 1995, there is no direction to maintain HCAs. HCAs are one method of maintaining options for managing forests to provide habitat for species where population viability is a concern.

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There is no requirement to be consistent with the peer review committee findings. See the discussion of Viable Wildlife Populations in Chapter 2.

16u. The FWS recommends that, to an extent statutorily possible (in light of the Rescission bill which allows no dollars for HCAs), a conservative habitat management approach be taken to maintain the options required to conserve the goshawk. Continue to address long-term land management requirements of old-growth dependent species such as the Queen Charlotte goshawk. Recommends a cumulative impacts analysis for goshawks. (USDI)

FS Response: Refer to Chapter 2 Viable Wildlife Populations and to Chapter 4 Wildlife sections for discussion on HCAs in the Final EIS.

16v. The Draft EIS is not specific in terms of fish and wildlife habitats. (ADF&G)

FS Response: More specific information is included in the resource inventory reports.

16w. Expand discussion of activities planned in beach/estuary fringe areas. (ADF&G)

FS Response: There are no harvest units planned in beach or estuary fringe areas. Some of the tables in the DEIS displayed acres of harvest in these areas, but they were in error. Roads may occur in these areas and BMPs would apply to their construction and RMOs would address their maintenance. Construction and monitoring of LTFs would consider ATTF guidelines. Camps would be situated using BMPs. More information on BMPs, RMOs and ATTF guidelines are filed in the Project planning record.

16x. Conduct surveys to determine population viability and distribution of Federal trust species (e.g. neotropical migrant bird species). Address habitat capability on a landscape level and identify areas that produce large cone crops at lower elevations as retention areas. (USDI)

FS Response: This was not done for this Project, but will be considered for future projects.

16y. Additional study of goshawks using the Project Area should have been conducted. An assessment of how stressed the existing population is needed. (SCS)

FS Response: This has been done and the information is included in the Endangered Species sections of Chapters 3 and 4, and in the Biological Assessment/Biological Evaluation in Appendix B.

16z. Discuss in detail the surveys for goshawks and marbled murrelets. (ADF&G)

FS Response: This information has been included in the Final EIS.

16aa. Were marbled murrelet surveys conducted in the Project Area? Identify investigations. Page 3-31; Marbled murrelet surveys should have been done in the Project Area and the results included in the Draft EIS. Page 4-33; More research is needed on marbled murrelet nesting habitat requirements and on cumulative effects of timber harvest on murrelet habitat. In addition, surveys for the birds following the established protocol are necessary. Page 3-31; The statement that no murrelet nests were found is inappropriate, as surveys were not conducted. (USDI, SCS)

FS Response: No nest surveys were conducted. However, other marbled murrelet surveys were conducted during the summers of 1993, 1994, and 1995. Information regarding these surveys is included in the Final EIS in the Endangered Species sections of Chapters 3 and 4, and in Appendix B, Biological Evaluation.

16bb. Address cumulative effects on marbled murrelet populations on Baranof and Chichagof Islands. (USDI)

FS Response: This discussion is beyond the scope of project level planning. The TLMP is currently addressing this issue.

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16cc. Analyze wildlife using the models for red-breasted sapsucker, hairy woodpecker, and brown creeper. Include hairy woodpecker and brown creeper in wildlife effects analysis. Include impacts on old-growth cavity nesting MIS (brown creeper, hairy woodpecker, red breasted sapsucker) in table 2-3. (USDI)

FS Response: Effects analysis was completed for these MIS. This analysis is documented in the Project planning record. Additional information has been added to the Final EIS, including display of effects on the brown creeper.

16cc. The assumption that harlequin ducks will not be affected is unsubstantiated. (USDI)

FS Response: Refer to the Biological Assessment/ Biological Evaluation in Appendix B of the Final EIS for more information.

16dd. The Bald Eagle MOU is now an Interagency Agreement. Update the Final EIS. (USDI)

FS Response: Thank you, this will be corrected in the Final EIS.

16ee. Address goats on Duffield Peninsula. Site-specific information on goats is needed (on the unit card) as well. (ADF&G)

FS Response: Thank you for your comment. This information has been added to the Unit Cards.

16ff. Page 3-25; Describe the extent and location of goat wintering habitat. Identify and analyze impacts to mountain goat wintering habitat. (USDI)

FS Response: Refer to response above and to the Wildlife sections in Chapters 3 and 4 in the Final EIS.

16gg. Display goat habitat and deer winter range, important habitat for deer, bears, otter, and marten. Display the critical habitat areas for sablefish, herring, kelp and eelgrass beds, crabbing areas, seal haulout areas, etc. (ADF&G, EPA)

FS Response: The Council on Environmental Quality regulations require EISs to be analytic rather than encyclopedic. EISs should be kept concise. The analysis and planning record for this project encompasses thousands of pages. We have chosen to include in the Final EIS only the information that we feel is critical to the decision. However this information is available upon request from the Project Planning Record and the Chatham Area GIS.

16hh. Include information on the genetic uniqueness of ABC bears, as well as population estimates. Address the genetic diversity of brown bear populations affected by this and other nearby projects. (SCS)

FS Response: This discussions is beyond the scope of project level planning. This issue would be best addressed at the Forest Plan (TLMP) level.

16ii. Discuss impacts to wildlife from helicopter harvest. Address possible effects of helicopter activity on seasonal waterfowl use in St. John Baptist Bay, Goose Cove, Rodman Bay, and Nakwasina Passage. Address impacts of helicopters on marbled murrelet populations at LTF sites. (MHD, USDI)

FS Response: This information has been included in the Final EIS in the Wildlife section as it pertains to bald eagles. A discussion of the effects of helicopters on wildlife is included in the Wildlife section in Chapter 4 of the Final EIS.

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16jj. Display the species distribution or sensitive habitat for goats, deer, bear, etc. in relation to proposed units and roads. (ADF&G)

FS Response: This information is available on request from the planning record and GIS.

16kk. Add more detail on unit and road cards. More data about harvest and road building in important wildlife habitats such as beach and estuary fringe is needed before an ACMP consistency recommendation can be made. (ADF&G)

FS Response: Additional information has been included in the Final EIS. There is also a large amount of this information in the Project planning record and GIS which is available upon request. Also see the response to 16gg.

16ll. Show impacts of increased ORV use on resident game populations. (CAJ, USDI, ADF&G)

FS Response: The impacts of increased ORV use on game populations is addressed in the Hunting, Fishing, and Subsistence section and Recreation section of Chapter 4. Increased access provided by ORV use on roads in the Project Area could increase hunter success and competition for all game species. If traffic levels were to become high enough, animal travel patterns could be altered by ORV use. These effects can be mitigated through the use of Road Management Objectives (RMOs). The District Ranger, through the use of RMOs, can set the levels of road maintenance and active or passive traffic control methods to control the pattern of vehicle use. This ability, combined with the range of alternatives, allows the decision maker to guide management activities for the Project Area. Through the use of RMOs, we do not expect ORV use to significantly impact resident game populations.

16mm. Develop a site-specific model estimating the demand on wildlife by logging camp personnel. (ADF&G)

FS Response: This would be useful, but has not been developed.

16nn. Wildlife information is completely lacking on the Unit Cards in Volume II of the Draft EIS. No mitigation measures are listed in the wildlife sections of the unit cards. (MHD, ADF&G, USDI)

FS Response: This has been improved in the Final EIS.

17. Marine Environment and LTFs

17a. LTFs in Nakwasina Passage and Sound may adversely affect crabbing in the area. Page 4-30; Discuss the commercial and subsistence dungeness crab fisheries in the Project Area, and the economic value of these fisheries. (ADF&G, SCS)

FS Response: Using the regional average of 1.96 acres of affected area per LTF and the three possible LTF sites which would equate to less than 6 acres effected or approximately 0.13 percent of the Nakwasina passage and sound area. Using this as a guide for the Project Area the impact would be very small and the economic loss would be small also.

17b. Include analysis of loss of logs and bark from rafting activities in marine environment analysis. (ADF&G, FPCP)

FS Response: Because log bundles are pushed into rafts by boom boats, which sometimes involve repeated and often vigorous contact with logs, considerable loosening and deposition of bark can be expected. The bark, however, will be scattered somewhat by the propwash of the boom boat. Furthermore, outside of the rafting grounds, the only potential sources of physical impact during log transportation are log losses either from sinkage from flat rafts or from loss or breakage of an entire bundled raft due to adverse weather conditions or rough seas. When salvage operations are undertaken to recover lost logs, physical impacts to the shoreline areas

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are relatively short-term and minimal. (Water Transportation and Storage of Logs, James R. Sedell and Wayne S. Duval, General Technical Report PNW-186 1985.) The flushing action of the various sites would also be a factor in bark deposition. The actual amount of bark loss is not known.

17c. Provide site-specific description of amount and extent of bark accumulation at existing LTF sites. (EPA)

FS Response: See Table 3-40 in the Final EIS.

17d. Include stream crossing structures, on-site stream characteristics, site specific location of stream crossings and in-stream activities, types of equipment to be used in stream, mitigation measures (include on road cards, as well). (EPA)

FS Response: This is not feasible as stream crossing structures have not yet been designed. This is a post-ROD activity. Stream characteristics have been noted on the road cards.

17e. Recommends alternatives to Schulze Cove site because of inadequate bark dispersal. (EPA)

FS Response: Schulze Cove has been used as a log storage site for many years. We feel that since this area has already been impacted, the small amount of bark that we will introduce to the area will be insignificant.

17f. Consider using direct land-to-barge log transfer at all sites in the Project Area to minimize impacts to the marine environment. (EPA)

FS Response: At most of the LTF sites in the Project Area the beach slopes gently (10 to 15 percent). Construction of a land-to-barge LTF would require a greater amount of fill material to reach deep enough water to operate a barge facility. This could pose a greater impact on the marine environment than a drive-down ramp.

17g. Nakwasina Passage LTF site does not meet ATTF guidelines. Alternatives suggested (Noxon LTF, HILTS, or barge facility). (EPA)

FS Response: See Appendix E Table on comparison of log transfer sites based on ATTF guide lines. The alternative site for this LTF is the St. John Baptist barge facility.

17h. Recommend not reusing the Lisa Creek LTF because of bark accumulation. Suggests use of HILTS or other LTFs in the area. (EPA)

FS Response: We have proposed using an alternative site in Lisa Creek in Alternatives 1 and 4. HILTS are not considered because of flight distance.

17i. Further document and evaluate the potential impacts of existing and proposed LTFs to the estuarine and marine environment in the Project Area. Quantified information IS available that documents decomposition, flushing, or other information about the longevity of bark and its effects on the marine benthic habitat (page 4-30). (EPA)

FS Response: A maximum of 0.6 percent of the total estuarine environment would be impacted under any action Alternative. Bark may last several decades. Flushing is directly related to the tidal action at the site and varies from site to site. See Appendix E, LTF Dive Reports.

17k. The 1.96-acre average value should NOT be used for bark accumulation, as site-specific information is available. (EPA)

FS Response: Table 3-40 displays existing bark coverage at previously used LTF sites.

17l. Thoroughly discuss kelp and eelgrass beds. (EPA)

FS Response: This information is included in the dive reports in Appendix E of the Final EIS.

17m. Provide a description of BMPs to minimize the discharge of bark, woody debris, and other pollutants from the LTFs. (EPA)

FS Response: See Appendix A of the Final EIS.

17n. Include a monitoring plan for each LTF site to ensure compliance with the ATTF guidelines (see EPA's letter, page 7, for specifics of monitoring plan). (EPA)

FS Response: ATTF monitoring guidelines are followed at each LTF site.

17o. Discuss in detail how removal of logging camps and LTFs will be accomplished. (EPA)

FS Response: The operator is required to remove all camp facilities from National Forest land and dispose in accordance to the law. In the case of a floating camp the operator will have obtained a permit from the state of Alaska and would have to follow the conditions of the permit. We would prefer to leave the LTF site in place so as not to disturb any marine life that may be using parts of the LTF as habitat. If necessary to remove the LTF we would require the material to be removed and stockpiled on the shore. Camp and LTF sites would be allowed to grow over naturally.

17p. Discuss the proper removal and disposal of solid waste (garbage, tires, engine blocks, slash, fuel storage tanks, etc.) resulting from this timber sale. Discuss mitigation of impacts associated with LTFs from unauthorized disposal of debris (cables, oil drums, bottles, netting, etc.). (EPA, USDI)

FS Response: All solid waste is removed from the site by the contractor to be disposed of in accordance with the law.

17q. Add information on the size, volume, and location of fuel storage tank/facilities. (EPA)

FS Response: This information is developed during implementation of this project and is not available prior to the Record of Decision.

17r. Discuss how monitoring for bark accumulation will be implemented. Establish permanent transects prior to LTF operation. Add NPDES monitoring and dive reports. (USDI)

FS Response: ATTF Monitoring Guidelines will be followed at each LTF site.

17s. Marine environment section needs to include dives recently completed by FWS. (DEC, EPA)

FS Response: The reports are in the planning record.

17t. Include complete dive reports for the LTFs as well as Construction and Operation guidelines. (ADF&G)

FS Response: Dive reports are on file in the planning record. ATTF Construction guidelines which guide the construction and operation of LTFs will be followed.

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17u. Address direct, indirect, and cumulative impacts of bark and other solid waste materials on estuaries, and the potential effect on resources of commercial and subsistence value. (USDI)

FS Response: Bark impacts are addressed in the Facilities report in the project planning record. Up to 0.6 percent of the total estuaries in the Project Area will be effected by bark and fill material to construct the LTFs. Solid waste is barged off the site and disposed of in accordance with the law.

17v. Limit number of LTFs and use barge facilities where economically feasible. The proposed alternative includes too many LTFs. Consider concentrating volume in one or two areas to boost economics. (DL, GSW)

FS Response: Most LTF locations are not compatible for barge sites without using a large amount of fill to reach water deep enough to operate a barge. We are proposing one LTF per sale area in all Alternatives except the St. John Baptist sale area in Alternative 4.

17w. Remove bulkheads and return beach to original contours if the site is not expected to be used within 5-10 years. (DL)

FS Response: Comment noted.

17x. The existing log dump at Appleton Cove should be used to dump wood from East Rodman. (BB, EPA, USDI)

FS Response: The Appleton Cove LTF is proposed for use in Alternative 2.

18. Silviculture, Alternatives to Clearcutting and Regeneration

18a. Page 2-4, group selection; Discuss consequences of converting old-growth habitat to a narrow range of age and size classes. Page 2-4; Functional diversity of tree sizes and canopy cover is lost, long term, in a seed tree cut, although species diversity is retained. We suggest this be made clear in the Final EIS. (SCS)

FS Response: The effects of harvesting old growth are analyzed in Chapter 4. We do not claim that seed tree harvest and group selection are a replacement for old growth in terms of diversity and habitat. They are a harvest method different from traditional clearcut methods that attempt to better meet specific stand objectives.

18b. Page 3-33; The assumption that the forests of Northwest Baranof are unhealthy is inappropriate. (SCS)

FS Response: We do not assume that all of the forests within the Northwest Baranof Planning Area are unhealthy. However, certain areas do have disease, rot, and mortality which is characterized as "unhealthy".

18c. Overstory removal is just another form of highgrading, leaving limited canopy for snow interception. Even as little as 20 percent overstory removal radically changes the structure of the stand. The ecological effects of overstory removal will be insidious if practiced widely. Page 2-4 states Overstory removal maintains ... (20 - 60 percent of the existing stand). However, units 4095 and 6293 maintain only 10 percent of the stand. (SCS)

FS Response: Overstory removal is applied under specific stand conditions which include a healthy and vigorous understory layer. It is not expected or designed to intercept the majority of snowfall immediately following harvest. In Southeast Alaska, much of our old growth has developed with minimal disturbance. This has allowed shade tolerant species such as western hemlock to continue to establish beneath an existing canopy of trees. This is different than many other regions where most species require more light to establish and thus few new trees establish beyond the initial pioneer species until a disturbance creates gaps which allow new tree germination and growth. For this reason, the hemlock that exists in the understory often established at a later time than the initial overstory trees. These understory trees are not necessarily slower growing genetic stock but are under less than optimal growing conditions because of shading from the overstory trees. Once these overstory trees are removed, the remaining understory should grow at least as fast as the original stand. The

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method is similar to the final harvest in a shelterwood system where initially a percentage of the overstory is harvested to allow new seedlings to establish. After their establishment, the shelter (remaining overstory) is removed to allow better growth of the understory.

This method has very different effects than highgrading. Highgrading occurs when stands develop at one time following a disturbance. The trees compete for growing space and the faster growing, healthier trees grow larger than their neighbors. Because the growth differences occur on the same site, they are usually not due to environmental differences but instead attributed to genetic differences. By repeatedly removing only the larger trees from the stand, it is believed that only the poorer genetic stock will be left to regenerate. Through time this can degrade the overall forest health.

The reference on page 2.4, "Overstory removal maintains... (20 - 60 percent of the existing stand)", refers to the number of trees per acre to be maintained in the unit following harvest. The unit cards in Appendix G (including units 4095 and 6293), list the amount of volume per acre to be harvested. These unit examples list 90 percent of the volume to be harvested which is likely to come from much less than 90 percent of the tree. The larger trees in the unit contain the majority of the volume. Therefore, to retain 10 percent of the volume, 20 percent or more trees will likely be left standing.

18d. The benefits of thinning for wildlife are overstated. Thinning for wildlife has occurred on a limited and experimental basis. It requires additional labor and cost. (ADF&G)

FS Response: We disagree that the benefits are overstated. While it is true that the results from this thinning is inconclusive, there is evidence of success with this form of thinning from other areas on the Tongass. The Sitka Ranger District has been implementing this type of thinning on a large scale and the costs have not been more than traditional methods. In some cases, the costs are reduced. If you would like more information about this program, please visit the Sitka Ranger District.

18e. Although only eight acres of Volume Class 6 are claimed for harvest, the unit cards suggest other stands with greater than 30 mbf/acre. (ADF&G)

FS Response: The number of acres by volume class is determined using our GIS database, TIMTYPE data layer which assigns a range of volume for the different classes. This layer is based on photo interpretation of stands across the Tongass. The specific unit volumes that are determined for this project are based on a combination of stand exam plots in conjunction with this TIMTYPE data layer. Therefore there may be some discrepancy between the two methods. However, it is worth noting that none of the unit cards show greater volume than 30 mbf/acre. There are 22 units that have 30 mbf/acre which is considered Volume Class 5.

18f. Although the Draft EIS claims only a few hundred Volume Class 6 acres present, the existing condition map shows large expanses of high volume timber in the Project Area. Is this an error? (ADF&G)

FS Response: Thank you for your comment. This was an error in map production. The amount of high volume shown on the map should be far less. Volume class 5 was shown as high volume (which should only be volume class 6 and 7), instead of low volume. The actual numbers are listed in the Silviculture and Timber Management section, Chapter 3.

18g. The method used to determine proportionality has been ruled against and should not be used. (ADF&G)

FS Response: The legal requirement to meet proportionality is from Section 301(c) (2) of the Tongass Timber Reform Act (TTRA), 1990 and is only required for long-term contract sales. The analysis will not be required should Northwest Baranof be sold under independent contract as planned. The proportionality calculation is based on acres of Volume Class 6 and 7 being harvested relative to Classes 4 and 5, and how this compares to the original proportion of these volume classes at the time the legislation was enacted. Our method to determine

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proportionality uses the TIMTYPE data layer in our GIS database. The use of both the TIMTYPE layer and evaluation by acres rather than volume were found to be “arbitrary and capricious” in a court decision in 1994. We are developing new methods currently being reviewed for adequacy by the USFS, the appellants, and several other groups and individuals. Until this review is complete and a method determined adequate, no change to our original calculation can be made. Therefore, we are using the only available means to estimate proportionality at this time. Although expected proportionality is predicted in this document, the actual proportionality determination is based on the implemented timber sales and not on the planned sales.

18h. Page 2-4; Will old-growth attributes be retained, to what degree, and where? Page 2-5; Use of the word “diverse” to describe the multilayered canopy produced by overstory. “Removal” is misleading since the diversity of old-growth habitat will be lost. (SCS)

FS Response: For a comparison of the amount of existing old growth compared to the amount proposed for harvest, refer to Table 2-4 in Chapter 2. The silvicultural methods prescribed for harvesting the units will vary in the amount and type of old-growth attributes they will maintain or provide. Group selection is an uneven-aged silvicultural system that produces a diverse forest structure. In this context, “diverse” implies a variable canopy layer. Approximately five different “layers” of canopy will be developed across the unit. It does not produce that diverse structure on each individual acre within the unit. The size of the openings can vary from 0.5 to 2 acre openings. Therefore, one to four different canopy layers can be developed on a given acre. This can mimic some disturbance patterns that occur naturally on the landscape, although it is not expected to mimic areas of old growth that have developed with very small disturbance such as individual tree mortality (refer to Chapter 3). All of the old growth structure will not be lost with this method of harvest. The entire unit will not be harvested for 160 to 200 years (refer to Chapter 2). This means immediately following harvest, 80 percent of the old growth will remain until the next entry in 40 to 50 years. After the final groups are removed, the original harvested area will be 160 to 200 years old. It is estimated that old growth structure begins to develop in Southeast Alaska when trees reach approximately 150 years (refer to Chapter 3).

Where the seed tree system is implemented, most old growth characteristics will not be maintained immediately following harvest. However, the residual seed trees are not scheduled to be harvested in the near future (as in traditional seed tree harvests). These trees will provide large tree structure that may increase the rate at which old growth characteristics return to the site. These trees will provide snags, and large down woody material while the understory regenerates. They will also provide for different canopy layers. This will be most prevalent in cases where the seed trees are well distributed across the unit. The distribution will vary by the current stand conditions, topography, and yarding system (refer to Chapter 2).

Overstory removal will retain several canopy layers immediately following harvest. These layers will be in the smaller size trees that are currently in the understory. In some areas, larger trees may also remain. Several old growth characteristics will not remain in the stand initially, but are expected to return much more quickly than in the traditional clearcut methods. The trees that remain on the site often range from 40 to 150 years old with good growth potential (refer to Chapter 2). They are expected to grow very rapidly following the removal of the larger trees above. This could result in old growth structure within approximately 40 to 60 years. The use of the term “diverse” is not meant to equate this to old growth but to help create a picture of the multi-layered canopy that will result.

18i. Describe the retention of snag trees as a short-term benefit because snags will eventually fall or blow down. Page 2-8; Leaving snags will maintain stand diversity only until snags eventually fall, and is therefore a temporary measure. (SCS)

FS Response: It is inevitable that snags will eventually fall over and decay. We do not state that these are permanent measures. There is no appropriate method to predict the length of time snags will remain standing in any stands whether harvested or not.

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18j. Page 3-13; Add information on the total existing and typical annual amounts of windthrow in the Project Area. (SCS)

FS Response: The windthrow in the Project Area was not quantified. The presence and degree of windthrow was noted on field exams but not mapped.

18k. The Draft EIS does not adequately describe natural disturbance patterns, nor does it adequately describe the management activities it proposes which mimic natural disturbance patterns. (SCS)

FS Response: The natural disturbance patterns that occur within the Project Area are discussed in the following sections in Chapter 3: Ecological Processes, Landslides, and Natural Disturbances. In addition to these sections, natural disturbance patterns and how they relate to the assigned silvicultural treatments are discussed in Silvicultural Treatment Descriptions in Chapter 2.

18l. Page 2-5; Discuss the scale of natural wind disturbance patterns vs. the scale of group selection which is said to mimic natural disturbance. Also, since group selection removes wood fiber from the area, wind disturbance is not accurately "mimicked." (SCS)

FS Response: The scale of natural disturbance within the Northwest Baranof Planning Area is discussed in the Natural Disturbances section in Chapter 3. The acres of natural disturbance in the area has not been quantified, although the frequency of the different scales of disturbance were noted in field exams. The amount of group selection for each alternative is listed in Table 2-1. Group selection is a harvest method designed to produce timber in a manner that mimics natural disturbance patterns. It is not solely designed to mimic natural windthrow events without some benefit of timber production. Therefore it does not "duplicate" natural disturbance by leaving wood on the ground.

18m. Display alternatives using pulp and utility volumes as well as net sawlog. (ADF&G)

FS Response: Sawlog volume is the customary way of advertising independent timber sales. Sales are advertised and sold on the basis of sawlog volume except in the case of sales planned for the long-term contracts. Northwest Baranof is currently scheduled for independent offering and thus sawlog volume is displayed. Utility volume (including pulp) is tracked, however, and the total net sawlog plus net utility volume appears in the Silviculture and Timber Management section, Financial Efficiency Analysis Tables, Chapter 4.

18n. Page 2-8; Display old growth by volume class, rather than aggregated. (SCS)

FS Response: The use of old growth by individual volume class was not necessary for this analysis and therefore, was not done. However, we do discuss proportion of Volume Classes 6 and 7 proposed for harvest (proportionality) in the Silviculture and Timber Management section of Chapter 4. Refer to the additional wildlife old growth habitat analysis in Chapter 4.

18o. Page 2-22; The word "maximum" is inappropriate in this sentence because exceptions are allowed. (SCS)

FS Response: We disagree. The entire sentence, taken in context, is clear.

18p. Page 2-22; Include a quantitative discussion of cumulative size of disturbed areas, particularly on the east side of Rodman Bay. (SCS)

FS Response: Individual areas were not defined within a VCU to quantify harvest. Tables 4-26 through 4-30 quantify the amount of past and proposed harvest by VCU by alternative. These tables do not specifically isolate the east side of Rodman Bay, however, VCU 292 primarily includes harvest around the shores of the bay.

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18q. Disclose falldown in discussion of sustainable logging as required by 42 USC Section 4332(2)(C)(iv). Further address falldown and highgrading. (SEACC, SCS)

FS Response: Sustainability of all renewable forest resources is a forest wide issue that is addressed in the TLMP. The component of the forest Allowable Sale Quantity (ASQ) for the management areas (C40 & C41) was assigned by TLMP. The purpose and need for the Northwest Baranof Project, as identified in Chapter 1, is expected to produce 30-100 mmbf based on the ASQ and other direction set by the Forest Plan. All of the four alternatives presented in this project are within this range (refer to Table 2-1), which would allow for sustainable management. Alternative 4, which proposes to harvest the most acres and volume, is still under the maximum for the Project Area by 33.1 mmbf. This would allow for significant falldown to occur while still maintaining a sustainable harvest level. The TLMP revision process is analyzing the occurrence of falldown and how to consider it for the revised Forest Plan.

Highgrading on an individual stand is not a factor based on the silvicultural harvest methods that are assigned (see discussion of harvest methods in Chapter 2). Across the landscape, we have chosen areas to harvest that best meet the needs of multiple use (several resources). Therefore highgrading for any particular resource has been avoided. The level of harvest in high volume (volume class 6 and 7) compared to lower volume areas (volume class 4 and 5) is proportional to the respective amounts that occur on the landscape for this area (refer to the discussion of Proportionality in Chapter 4).

18r. The FS's claim that all previously harvested areas have been certified as adequately stocked is inaccurate. (MHD, ADF&G)

FS Response: All previously harvested stands have been certified as restocked. Many of the riparian areas and adjacent slopes that experienced high soil disturbance during logging or past road building have regenerated to red alder. For stocking purposes, red alder is an adequate species for certification. Many of these areas are also regenerating with conifer species underneath the alder but they are usually much smaller and less abundant.

18s. Successional cycles of true multiple use for this forest should be based on a minimum of 150 years. Postpone additional harvest in the Project Area until the second growth has matured. (JCV, MCG, HK)

FS Response: The decision on how to accomplish the best multiple use management is determined in the TLMP. This was done by assigning LUDs across the forest. A discussion of the designations affecting the Project Area and how it was selected for planning at this time, is discussed in Chapter 1.

18t. Page 3-10, Page 4-90, paragraph 6; Timber rotations should be 250+ years for some species (deer, murrelet, goshawk, flycatcher). (USDI)

FS Response: Areas that are under 100 year rotations may not reach old growth conditions suitable for certain species. These species will be dependent on the old growth retained in other areas. Refer to Chapter 2, the Viable Wildlife Populations section and to the Vegetation section for discussion. The Project Area retains old-growth areas that would continue to supply habitat to those species.

18u. Discuss further the kind of logging which took place and its consequences. (ADF&G)

FS Response: Please refer to "Historic Timber Use", "Riparian Areas", and "Stream Condition", in Chapter 3 of the Final EIS.

18v. Add site-specific information on the effects of past harvest. (ADF&G)

FS Response: Site-specific information about the effects of past harvest can be found in Chapters 3 and 4 and the Appendices of the EIS and in the Project planning record.

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18w. The FS should consider logging of a different type and scale in the Project Area which allows for sustainable, multiple use. (SCS)

FS Response: Thank you for your comment.

18x. Page 2-2; Change the word “developed” to “applied” in the discussion of harvest methods. (SCS)

FS Response: These prescriptions have not been applied. They were developed from accepted silvicultural practices and modified to better meet the objectives for a particular stand.

18y. Table 2-4; Alternative 2 is in error. Include 1954 old-growth acres. (USDI)

FS Response: Thank you for your comment. Table 2-4 has been corrected.

18z. Table 3-12; Display old growth and second growth separately. (SCS)

FS Response: Table 3-12 is not designed to display old growth in the Project Area. Tentatively suitable land is specifically defined as the landbase within the Project Area that is available for harvest. The discussion in this section explains the actual definition.

18aa. Table 3-14; Add not only timber taken by APC but all timber taken from the Project Area. (SCS)

FS Response: Table 3-14 does include all documented timber harvest within the Project Area.

18bb. Page 4-10; Add information supporting belief that forested wetlands are capable of regenerating on a sustainable-yield basis. (USDI)

FS Response: A FS policy group has extensively reviewed this issue on the Tongass National Forest and produced a white paper. Based on current information, they found that these wetland sites are suitable for tree growth. A study of past harvested wetland sites is being initiated to collect more data on this issue. During this study, harvest on these sites will be minimized. All harvested wetland sites on the Chatham Area are currently certified with regeneration. Growth on these sites will be monitored and is expected to be slower than on non-wetland sites. If these sites result in slower growth as expected, the harvest rotation on these areas will be longer than on non-wetland faster growing sites. This will result in sustainable-yield on these sites.

18cc. The extensive use of helicopter logging needs to be done cautiously until it is determined whether the seed bed will be prepared so that we will continue to have the vigorous second growth we are now experiencing with cable logging. (GSW)

FS Response: Helicopter yarding occurred on the Stikine Area before it was introduced on the Chatham Area. Their results have shown adequate regeneration on helicopter sites. There was some concern raised on the abundance of slash created on helicopter units on the Chatham Area, at the Corner Bay helicopter logging sites. Several units were reviewed by a team of silviculturists and timber department personnel. A memo (Reply to 1410/2470 dated July 11, 1995) documented their findings that the slash presents no barriers to regeneration of these helicopter logged areas. They are anticipated to meet certification standards. Some caution was noted that western hemlock could be favored over Sitka spruce, although spruce is still anticipated to be a major species to the stands and will be favored at the time of precommercial thinning. After monitoring these sites, if Sitka spruce is found to be under represented, planting the helicopter sites will be considered.

18dd. The intensity of harvest proposed in the Lisa Creek drainage is excessive and would eliminate most of the productive forest in that drainage. (ADF&G)

FS Response: Comment noted.

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18ee. Pages 2-14 and 3-23; Use a consistent definition of old growth throughout. (SCS)

FS Response: Comment noted. The definition in Chapter 3 has been updated to better compare to that described in Chapter 2.

19. Subsistence

19a. Alternatives 1 through 4 would be too harmful to subsistence hunting and fishing around Sitka. (CW)

FS Response: The evaluation of comments from the public, subsistence hearing testimony, and additional analysis, indicates that the potential foreseeable effects from the action alternatives in the Northwest Baranof Project Area do not indicate a significant possibility of a significant restriction of subsistence uses for brown bear, furbearers, marine mammals, waterfowl, salmon, other finfish, shellfish, and other foods such as berries and roots.

The analysis does conclude that there is a significant possibility of a significant restriction on subsistence use of Sitka black-tailed deer in the Project Area for the community of Sitka. Implementation of the action alternatives by themselves do not present a significant possibility of a restriction to subsistence use of deer. The effects of the action alternatives on the subsistence use of deer are minimal, with a reduction in deer habitat capability in the future of less than 2 percent. However, there is a significant possibility of a significant restriction when the action alternatives together with other past, present, and reasonably foreseeable actions are considered in a cumulative manner. This restriction exists regardless of which alternative is implemented, including the No Action Alternative. This restriction would be a result of (1) a decrease in habitat capability that could decrease the abundance or distribution of deer, (2) high deer mortality during severe winters that occur periodically, (3) average yearly deer harvest levels exceeding what appears to be sustainable harvest levels, and (4) anticipated human population growth with its associated increase in subsistence hunter demand when compared to the habitat capability to produce deer.

19b. The impacts to subsistence of the Northwest Baranof Project are unjustifiable for humanitarian reasons. (SCS)

FS Response: Impacts to subsistence are reasonably minimized in each of the action alternatives. Some impacts on subsistence are justified to meet the Forest Plan and statutory objectives. Also see response to 19a.

19c. Page 3-45; The Final EIS should state that Sitka is the largest subsistence community in Alaska in terms of population, and discuss the cultural importance of subsistence. (SCS)

FS Response: While Sitka is the largest rural community in Southeast, it is commonly the case that a minority of the households do most of the hunting and fishing within the community. Also, there is commonly a portion of the community that participates in fishing and hunting as recreational activities and not as an efficient way of obtaining wild foods (Wolfe 1989). The cultural importance of subsistence may be summarized by the input from tribal elders, in a section on Relationships added to Chapter 3. We discussed the cultural importance of the Native allotments, cultural sites and subsistence uses under individual sections of Chapters 3 and 4 under "Hunting, Fishing and Subsistence," "Heritage Resources," and "Land Status."

19d. Sitka should be removed from the areas eligible for subsistence because of the high percentage of people supported by government. (BB)

FS Response: Eligibility for subsistence areas are determined by the U.S. Fish and Wildlife Service, and are beyond the scope of this Project. Impacts to subsistence are reasonably minimized in each of the action alternatives. Some impacts on subsistence are justified to meet the Forest Plan and statutory objectives.

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19e. Please don't destroy our subsistence base. (NK)

FS Response: Subsistence use of salmon, other finfish, shellfish, or other resources are not expected to be significantly restricted.

19f. Protect the subsistence deer population. (AS)

FS Response: Deer populations naturally fluctuate. The amount of deer habitat, which may be affected by this Project, is relatively small. The overall effect on the population by the logging in the action alternatives is also considered relatively small.

19g. Old growth provides shelter for deer. Additional clearcutting in the Project Area will result in a lot of winter kill (of deer) so subsistence users will suffer. (HK)

FS Response: Clearcutting changes deer habitat capability. However, there are many other factors that affect deer populations. All wildlife populations are cyclic and periodically severe winters will result in high mortality even in natural conditions. See also response to 19a.

19h. The Draft EIS conceals or ignores impacts to subsistence. (CS)

FS Response: The analysis in Chapter 4 of the Final EIS accurately portrays impacts to subsistence.

19i. The Project Area is the most important subsistence use area for Sitka and the Northwest Baranof Project violates protections for subsistence provided by ANILCA Section 810 and TTRA Section 101. The FS did not consider the high subsistence value of the Project Area. (ADF&G, FPCP, LMS, SCS)

FS Response: The Project does consider effects on subsistence. See the Hunting, Fishing, and Subsistence section of Chapter 4 and the response to 19a. The Section 810 findings are included in Chapter 4 of the Final EIS.

19j. Baranof and Chichagof and surrounding islands are important to Native subsistence lifestyle. Chichagof and Baranof coastline represent a way of life to all of our Tlingit nation. Timber harvest threatens the health and livelihood of all of our families by tearing down the forest for profit. "The animals and berries we collect make me and my family healthy people." There are too many areas no longer available for subsistence use; additional harvest in the immediate future endangers my lifestyle and my son's subsistence rights. We disagree that further timber harvesting will have little or no affect on subsistence because deer are presently being harvested at levels greater than the assumed harvestable percent of current modeled habitat capability. The discussion of Project Area selection is incomplete. Furthermore, the Project Area selection process does not appear to have considered the importance of this area to subsistence users. (ADF&G, STA)

FS Response: Thank you for your comments. We acknowledge that much of Baranof, Chichagof and the surrounding area is the traditionally claimed territory of the Sitka Tlingit (Please see "Heritage Resources: Cultural History" in Chapter 3). We also acknowledge that hunting and fishing use by Natives in Southeast Alaska is still tied to traditional land use (Please see "Hunting, Fishing, and Subsistence: Historical Use" in Chapter 3). The proposed sales will take place on northwest Baranof Island; a portion of the Sitka territory.

Section 810 of the ANILCA requires a Federal Agency having jurisdiction over lands in Alaska to evaluate the potential for effects of proposed land-use activities on subsistence uses and needs. If a federal action may significantly restrict subsistence uses, ANILCA describes several steps that an agency must complete. These steps are described in the Hunting, Fishing and Subsistence section in Chapter 4.

We have determined that although the effects of the action alternatives are insignificant, cumulative effects of all past, present, and future actions and conditions may lead to a significant restriction of subsistence use of Sitka black-tailed deer by the residents of Sitka. This restriction exists regardless of which alternative is

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implemented, including the No Action Alternative. This restriction would be a result of (1) a decrease in habitat capability that could decrease the abundance or distribution of deer, (2) high deer mortality during severe winters that occur periodically, (3) average yearly deer harvest levels exceeding what appears to be sustainable harvest levels, and (4) anticipated human population growth with its associated increase in subsistence hunter demand when compared to the habitat capability to produce deer. It is therefore reasonable to conclude that these effects may have an impact on Native subsistence lifestyles. We have disclosed this effect in Chapter 4 and we have completed the steps prescribed by ANILCA with regard to this significant effect (see Hunting, Fishing and Subsistence: Summary of Findings for Subsistence Use of Deer" in Chapter 4.) We do not expect to significantly impact the abundance and distribution of other food and firewood.

19k. The continued use of areas used for customary and traditional gathering serve to keep the culture alive and connected with the present. They deserve protection under not only the ANILCA, but also the NHPA and perhaps the American Indian Religious Freedom Act. (STA)

FS Response: Thank you for your comment. We've responded to these concerns, in part, with our response to 19j above. Additionally, the National Historic Preservation Act (NHPA) states that:

The head of any Federal Agency having direct or indirect jurisdiction over a proposed Federal or Federally assisted undertaking in any State and the head of any Federal department or independent or agency having authority to license any undertaking shall, prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, as the case may be, take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register. The head of any such Federal agency shall afford the Advisory Council on Historic Preservation established under Title II of this Act a reasonable opportunity to comment with regard to such an undertaking (Section 106, NHPA).

We have provided a complete review of the measures we've taken to comply with this Act in the "Heritage Resources" portions of Chapters 3 and 4. We have completed the "Section 106 Process" for all eligible sites within the Project Area. We would be obligated to complete additional Section 106 compliance processes if the Sitka Tribe of Alaska were to identify additional eligible properties within the Project Area.

Finally, the American Indian Religious Freedom Act pertains to Native American religious cultural rights and practices. It states "It shall be the policy of the United States to protect and preserve for American Indians their inherent right of freedom to believe, express, and exercise the traditional religions of the American Indian, Eskimo, Aleut, and Native Hawaiians...." (Section 1). It further states that "Federal departments...shall evaluate their policies and procedures in consultation with native traditional religious leaders in order to determine appropriate changes necessary to protect and preserve Native American religious cultural rights and practices" (Section 2). We have consulted with the Sitka Tribe of Alaska on a regular basis over the past 3 years. We are not aware of any native religious rights or practices that are jeopardized by the proposed sales.

19l. Allotments, culturally significant sites and subsistence use areas are all equally important and interrelated. To make a distinction is to lose sight of what is important culturally, spiritually, and socially. (STA)

FS Response: We agree that allotments, cultural sites and subsistence use areas are interrelated. We have added a discussion of these relationships in the Heritage Resources section of Chapter 3 in a subsection called "Relationships Between Heritage Resources, Subsistence and Native Allotments." The various laws which govern our consideration of Native allotments, cultural sites, and subsistence uses do, however, treat them separately. Please see the individual sections in Chapters 3 and 4 entitled "Hunting, Fishing, and Subsistence," "Heritage Resources" and "Land Status" for more complete explanations of these laws and how they relate to Forest planning.

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All of the information presented in the EIS is available to the decision maker. Although we divide Chapters 3 and 4 into subsections, we are not suggesting that individual resources and concerns are not interrelated and interconnected.

19m. The phrase “significant possibility of a significant restriction” is an ambiguous way to comply with Section 810. We suggest that you not use wording like “probably” or “likely.” (USDI)

FS Response: Thank you for your comment. The FS followed the guidelines published by the Alaska Land Use Council that provide the proposed action will be considered to significantly restrict subsistence uses if the action “can be expected to result in a substantial reduction in the opportunity to continue subsistence uses of renewable resources.” In this document we considered “may be a significant restriction” to be synonymous with “significant possibility of a significant restriction.”

19n. The proposed ANILCA findings are arbitrary and capricious. (SEACC)

FS Response: The ANILCA findings are based on the process portrayed in the Final EIS and are not arbitrary.

19o. Impacts to subsistence have not been minimized, and impacts are not fully revealed in the Draft EIS, as required by ANILCA. Selection of an alternative which favors timber harvest over subsistence is in violation of ANILCA. Page 3-42; Explain why the FS continues logging while acknowledging impacts of logging on subsistence. (SFS, RED-3, SCS-98)

FS Response: ANILCA Section 810(a)(3) requires determinations of effects and a specific process, but activities are allowed even though the possibility of a subsistence restriction exists. Section 810 of the ANILCA requires a Federal Agency having jurisdiction over lands in Alaska to evaluate the potential for effects of proposed land-use activities on subsistence uses and needs. If a federal action is likely to significantly restrict subsistence uses, ANILCA describes several steps that an agency must complete. These steps are described in “Hunting, Fishing and Subsistence: Subsistence” in Chapter 4. We have disclosed the effects in Chapter 4 and we have completed the steps prescribed by ANILCA (see Hunting, Fishing and Subsistence: Summary of Findings for Subsistence Use of Deer” in Chapter 4).

19p. Timber harvesting will not interfere with the traditional subsistence use of the area. (JWR)

FS Response: Logging activities may interfere with traditional hunting uses when conducted during hunting seasons. Hunters may be affected by noise, activity, or safety concerns.

19q. If the Project Area, which has already been extensively logged, is still important to subsistence users, it should merely prove that timber harvest does not adversely affect hunting. (BB)

FS Response: The Project Area may have been more productive prior to logging. Estimated habitat capability has been reduced. Please refer to the Hunting, Fishing, and Subsistence and Wildlife sections of the Final EIS. There is evidence that timber harvest may adversely impact hunting in localized areas.

19r. Subsistence use of the Project Area is insignificant. (BB)

FS Response: Area average subsistence harvests are high. 1,290 deer were harvested by by Sitka hunters - 38 percent of the community’s total harvest. We feel this means the area is important to Sitkans for subsistence use. Please refer to the Subsistence section in Chapter 3 of the Draft EIS.

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19s. Areas of concern are St. John peninsula; harvest from Katlian Bay to Nakwasina Passage; and units just north of Rodman Bay. (STA)

FS Response: This information was considered during alternative development, and will be considered in the final decision.

19t. Nakwasina Passage and Sound are high use recreation and subsistence areas. Harvest is of concern in these areas. Proposed cuts in Nakwasina and St. John Baptist Bay threaten subsistence lifestyle. (SPAB, MB2)

FS Response: Compared to much of the Project Area, Nakwasina Passage and Nakwasina Sound receive relatively high recreation and subsistence use. Harvest activity in these areas will probably have some negative impacts on recreation and subsistence use. In Alternative 3 and Alternative 5 (the no-action alternative) no harvest is planned for these areas. In Alternative 2 timber harvest would occur in the Lisa Creek drainage and on the peninsula between Nakwasina Passage and St. John Baptist Bay; however, LTF activity would be restricted to the area around Lisa Creek. Alternative 2 would have less impact on Nakwasina Sound and Passage than Alternatives 1 and 4. The range of alternatives will allow the decision maker to consider your concerns during the selection of an alternative for implementation.

19u. Too much timber harvest is proposed in the St. John Baptist Bay area. This is an important subsistence area. (ADF&G)

FS Response: No timber harvest is proposed in the St. John Baptist Bay area under Alternatives 3 and 5.

19v. Page 2-16; We believe the impacts of cumulative timber harvest on subsistence deer hunting will be substantial, and feel that the cumulative effects analysis is necessary. Cumulative effects on subsistence resources are not adequately addressed. (ADF&G, RR, SFS, SCS)

FS Response: The Final EIS discusses the direct, indirect, and cumulative effects on deer hunting and subsistence uses in the "Cumulative Effects" section. The evaluation of comments from the public, subsistence hearing testimony, and additional analysis, indicates that the potential foreseeable effects from the action alternatives in the Northwest Baranof Project Area do not indicate a significant possibility of a restriction of subsistence uses for brown bear, furbearers, marine mammals, waterfowl, salmon, other finfish, shellfish, and other foods such as berries and roots.

The analysis does conclude that there is a significant possibility of a significant restriction on subsistence use of Sitka black-tailed deer in the Project Area for the community of Sitka. Implementation of the action alternatives by themselves do not present a significant possibility of a significant restriction to subsistence use of deer. The effects of the action alternatives on the subsistence use of deer are minimal, with a reduction in deer habitat capability in the future of less than 1.2 percent. However, there is a significant possibility of a significant restriction when the action alternatives together with other past, present, and reasonably foreseeable actions are considered in a cumulative manner. This restriction exists regardless of which alternative is implemented, including the No Action Alternative. This restriction would be a result of (1) a decrease in habitat capability that could decrease the abundance or distribution of deer, (2) high deer mortality during severe winters that occur periodically, (3) average yearly deer harvest levels exceeding what appears to be sustainable harvest levels, and (4) anticipated human population growth with its associated increase in subsistence hunter demand when compared to the habitat capability to produce deer.

19w. Appendix I (under Angoon); Include the implication of implementing the proposed project when some of the WAAs are not sufficient to meet current subsistence demands. (USDI)

FS Response: The implication of changes in deer habitat where current demand exceeds supply are discussed in the Final EIS in Chapter 4. The effects would be the same for any of the communities, but the magnitude of the effects might vary. Sitka would be most affected.

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19x. Page 4-51; Acknowledge that competition for subsistence resources will increase substantially because of non-rural residents of logging camps. (ADF&G, FPCP, SCS)

FS Response: We have addressed this comment in the Hunting, Fishing, and Subsistence section of Chapter 4.

19y. Pages 4-45 to 4-34; Account for Sitka's increasing populations in the tables. (SCS)

FS Response: Appendix I includes projections of demand for deer which are based on Sitka's increasing population.

19z. Page 3-43, subsistence use areas; The IDT did not adequately address scoping comments, particularly regarding areas important to subsistence users. (SCS)

FS Response: We disagree. All scoping comments were reviewed and incorporated where appropriate in the Draft EIS. For example, many Sitka residents expressed concern about logging and road construction in VCU 300. In response to this concern, three of the five alternatives propose no activities in VCU 300 (Alternatives 2, 3, and 5). Alternatives 3 and 5 address scoping comments which expressed concern for all areas close to Sitka. Scoping comments revealed little concern over the areas surrounding Rodman Bay; therefore, Alternatives 2, 3, and 4 concentrate more harvest in that area.

19aa. Page 4-56, include percent decrease in deer harvests that would constitute a potentially significant effect on subsistence uses. (USDI)

FS Response: Comment noted. See Chapter 4 and tables included in Appendix G.

19bb. The Draft EIS does not demonstrate that this project is necessary and consistent with sound management principles for public lands, or meeting the FS's responsibilities to maintain subsistence values and uses.

FS Response: We have provided additional information in the Final EIS.

19cc. The Federal government should take over management responsibility of fish and game, plants, herbs, medicines, shellfish, and fowl in Southeast Alaska. (STA)

FS Response: This is outside the scope of this project.

20. Recreation and Scenic Quality

20a. Additional harvest could be proposed in VCU 291, as it receives less hunting pressure than other VCUs in the Project Area. (EJ, LB)

FS Response: Alternatives 3 & 4 propose to harvest all available timber units in VCU 291.

20b. VCU 288 is accessed by two of the best anchorages in the area, Schulze Cove and Baby Bear Bay. Drop units 4081, 4082, and 4083 from consideration for logging if this VCU is selected in the ROD. Logging in VCU 288 near Big Bear/Baby Bear State Marine Park is of concern. (EJ, SPAB)

FS Response: Logging is planned for VCU 288 near Big Bear/Baby Bear State Marine Park in Alternatives 1, 3, and 4. No unit will infringe upon the boundaries of the Marine Park; however, noise from active cable logging in those units closest to the park and from some of the helicopter units proposed for harvest in VCU 288 will probably be heard from the Marine Park. No harvest is proposed near the Marine Park in Alternative 2 or Alternative 5 (the no-action alternative). The range of alternatives will allow the decision maker to consider your concerns during the selection of an alternative for implementation.

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20c. Logging near the Allan Point recreation cabin is a concern. (SPAB)

FS Response: In alternatives 1 and 4 there will be logging in the Noxon Creek drainage. The LTF for this harvest area is located approximately one mile from the Allan Point cabin. There will be increased boat traffic in the waters outside of the small bight where the cabin is located when the LTF is active. Noise from LTF operations, particularly from helicopters, will most likely be noticed from the cabin. Helicopter noise will also be noticed at the Allan Point cabin when logging is active at the head of Nakwasina Sound in Alternatives 1 and 4, and at the Lisa Creek drainage in Alternatives 1, 2, and 4. Due to the longer distances from the cabin, helicopter noise from the head of Nakwasina Sound and Lisa Creek will be less noticeable than the noise from Noxon Creek. In Alternative 3 and Alternative 5 (the no-action alternative) no harvest is planned for any of these areas near the Allan Point Cabin. The range of alternatives will allow the decision maker to consider your concerns during the selection of an alternative for implementation.

20d. None of the alternatives is designed to be compatible with tourism and recreation. Selective cuts are suggested. (AWRTA)

FS Response: All alternatives were developed considering recreation and tourism within the parameters of the land use designations set by the TLMP Management Plan for this area. In the Project Area, VCU 291, 292, and 299 have been given LUD IV designations by the TLMP (1979, as amended). LUD IV areas are to be managed for intensive resource use and commodity development. The remainder of the VCUs in the Project Area are designated by the current Forest Plan as LUD III. LUD III areas have high amenity values and high commodity values and are to be managed in a compatible and complimentary manner to provide the greatest combination of benefits.

It is unreasonable to expect LUD III and IV areas to provide the same quantity and type of recreation and tourism uses and values as areas not managed for timber development. When timber is harvested, amenity attributes of the areas will change from the more pristine towards the more developed. The character of Recreation and Tourism which takes place in these areas will change to reflect these attributes. One example of this will be the use of the new road systems for accessing areas away from the shoreline by foot, bicycle, or ATV.

In all alternatives no timber harvest is proposed within 500 feet of saltwater shorelines or 1000 feet of estuaries. We have altered unit shape and placement in the landscape to reduce visual impacts, where necessary. In addition, harvest methods other than clearcutting have been proposed in many of the units visible from the ferry route and from areas of major recreation and tourism use. These alternative harvest methods should have fewer visual impacts than traditional clearcutting. Due to these silvicultural prescriptions, topographic screening, and short duration/oblique angle views most harvest units in each action alternative will meet the VQO. There will, however, be some units in each action alternative which will not meet the VQO.

Harvest method selection; unit design, spacing, and placement in the landscape; mitigation measures; application of TTRA buffers; adherence to Best Management Practices (BMPs); and maintenance of 500 feet shoreline and 1000 feet estuary buffers will maintain recreation and tourism attributes consistent with the land use designations in the Project Area. In addition, the range of alternatives for this project allows the decision maker the ability to select an alternative which he feels best provides for the proper balance of amenity and commodity values.

20e. Page 2-16; Discuss what types of changes to recreation setting are considered to be good, and in what amounts. Add site-specific information regarding recreation places. (SCS)

FS Response: Changes to recreation setting can be "good" or "bad" depending on a person's point of view. The building of a road in an area may be viewed by some as a curse, while others consider it an avenue to pursue their preferred forms of recreation. Changes to recreation setting of the Project Area under all alternatives are within the parameters of the land use designations set by the TLMP. (See the reply to 20d for related information.) The appropriateness of the land use designations are beyond the scope of project-level planning

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and are addressed at the Forest Planning level. Site-specific information on recreation places was included in Chapters 3 and 4 and in Appendix F of the Draft EIS.

20f. Protect visual values in proposed cuts in Nakwasina and St. John Baptist Bay as they are right on the ferry route. (LB2)

FS Response: Comment noted and considered. In all alternatives no timber harvest is proposed within 500 feet of saltwater shorelines or 1000 feet of estuaries. We have altered unit shape and placement in the landscape to reduce visual impacts where necessary. In addition, harvest methods other than clearcutting have been proposed in many of the units visible from the ferry route. These alternative harvest methods should have fewer visual impacts than traditional clearcutting. Due to these silvicultural prescriptions, topographic screening, and short duration/oblique angle views, most harvest units in each action alternative will meet the VQO. There will, however, be some units in each action alternative which will not meet the VQO. The range of alternatives allows the decision maker the ability to vary the effects of harvest on the visual resources. Alternative 3 and Alternative 5 (the no-action alternative) do not propose harvest in the Nakwasina and St. John Baptist Bay areas. The range of alternatives allows the decision maker the ability to select an alternative which he feels provides the best balance between visual and other resources.

20g. Page 3-51; All shorelines should be considered “existing recreation places” because of the proximity of kayakers to the shoreline. (SCS)

FS Response: Recreation places can be thought of as the habitat where recreation takes place. All Recreation Places have attractors which draw people to use them and have activities associated with them. Attractors in Southeast Alaska include such things as dispersed camp sites, recreation cabins, roads, trails, unusual or interesting beaches, estuaries, small bights and protected areas where people tend to want to go to shore, and other features which cause people to want to use the same area repeatedly for more than a brief length of time. Not all shorelines are recreation places. The fact that people pass in close proximity to a shoreline does not mean that the shoreline is a recreation place. Similarly, areas which receive only occasional hunting use are not necessarily recreation places. There are, however, areas designated as recreation places which see little use other than hunting. These recreation places receive regular and significant hunting use. The attractors which cause an area to become a recreation place must be of significance to cause more than occasional use. Changing the definition of recreation places to include areas which see no more use than the passing of a human being would broaden the inventory to the point that it would lack meaning.

20h. Page 2-16; Add site-specific information on scenic quality for comparing alternatives. (SCS)

FS Response: Chapter 2 is designed as an overall comparison of alternatives. Site-specific information on scenic quality can be found in Chapters 3 and 4 and the planning record.

21. Heritage Resources

21a. The Draft EIS displays too much cultural resource information, creating potential for unauthorized excavation and vandalism. (ADF&G)

FS Response: This is certainly a valid concern. Archeological sites are non-renewable, fragile resources. This Draft EIS displays more Heritage Resource information than has been displayed in past EIS's, however, no location specifics are provided.

The most specific location information is displayed in the second column in Table 4-43. This table shows the approximate relationship between archeological sites and proposed activities. It lists only those activities which may occur within 1/3 mile of documented sites. Distances are approximate and have been rounded to the nearest tenth mile. In order to address this concern we have changed the heading on column two to more a

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accurately reflect our intentional effort to show only rough distances and compass bearings. It now reads "approximate distance and direction from."

21b. The Kiks.adi Survival March Trail is important. The Sitka Tribal Council formally resolved that the Kiks.adi Survival March Trail should be nominated for the National Register of Historic Places. The staff of the Sitka Tribe are currently working on completing the registration form to send to the United States Department of the Interior, National Park Service. (STA)

FS Response: We are fully aware and supportive of the Sitka Tribe staff's efforts to nominate the Kiks.adi Survival March Route to the National Register.

We are aware of the importance of the route and agree that the route may be eligible for inclusion on the National Register of Historic Places. While completing Section 106 documentation for the Northwest Baranof Timber Sales our archeologists attempted to complete a National Register Registration Form for the property. We had no trouble documenting the significance of the route. We found it difficult, however, to pinpoint with any certainty the exact location of the route. Herb Hope, a Sitka Kiks.adi Tlingit and his family, have made a remarkable effort over the past five years to reenact the Survival March. While completing the documentation for the National Register Nomination Form we relied primarily on information supplied by Herb Hope and his family.

We understand that there is widespread support within the Sitka Tlingit community for Herb Hope's efforts. As our research progressed, however, we discovered that there are many different versions of the story of the Survival March and that the route Herb Hope chose to use during the reenactment was one of several possible routes. Since the route does not consist of a discernible physical trail, our archeologists did not feel they had adequate information to complete a registration form.

Consequently, our archeologists consulted with Sitka Tribe staff several times during 1995 concerning how best to proceed with the Survival March Route nomination. All parties agreed that the Sitka Tribe should take over the nomination effort. The Tribe is best able to coordinate meetings among its tribal elders in order to reach consensus concerning the exact route taken by the Marchers in 1804. Consequently, we supplied a copy of the nearly complete National Register Registration Form to Sitka Tribe staff.

During a November 1995 consultation meeting Sitka Tribe staff informed our District Archeologist that they planned to coordinate a meeting with knowledgeable community elders in order to come to a group consensus concerning the specific route. Once this is accomplished, we would like to continue to assist with the nomination.

We recognize the importance of the route, however, we cannot address effects through the Section 106 process until we have a clearly defined property which has either been determined eligible for inclusion on the National Register by the State Historic Preservation Officer or has been selected for inclusion on the National Register of Historic Places by the Secretary of the Interior. Once the Survival March Route has been determined eligible or is actually listed on the National Register, we will consult with the Sitka Tribe concerning effects from the proposed Northwest Baranof Timber Sales(s) on the the historic property.

21c. The presentation of Native allotments, subsistence, and heritage resources within the Draft EIS is not integrated. An interdisciplinary approach was not used, as required by Forest and Rangeland Renewable Resources Planning Act of 1974, as amended and by the NFMA. (STA)

FS Response: Your comment has been noted. Please see the end of the Heritage Resources section in Chapter 3 where we have added a brief discussion of these interrelationships.

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The National Environmental Policy Act of 1969 requires us to prepare an EIS. The act, however, does not require that the descriptions of the affected environment and environmental consequences be presented in the manner you have indicated.

Furthermore, the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended by the National Forest Management Act of 1976 requires that an interdisciplinary approach be used in forest planning. It dictates that a team representing several disciplines shall be used in forest planning to insure coordinated planning of the various resources (CFR 219.5(a)). It does not dictate the format to be used in EISs.

All of the information presented in the EIS is available to the decision maker. Although we divide Chapters 3 and 4 into subsections, we are not suggesting that individual resources and concerns are not interrelated and interconnected.

21d. NFMA provides for the protection and management of culturally significant cultural resources. (STA)

FS Response: We agree. 36 CFR 219.24 states that "Forest planning shall provide for the identification, protection, interpretation, and management of significant cultural resources on National Forest System lands. Planning of the resource shall be governed by the requirements of Federal laws pertaining to historic preservation, and guided by paragraphs (a)(1) through (a)(3) of this section.

(a) Forest planning shall

(1) Provide an overview of known data relevant to history, ethnography, and prehistory of the area under consideration, including known cultural resource sites.

(2) Identify areas requiring more intensive survey.

(3) Provide for evaluation and identification of appropriate sites for the National Register of Historic places

The National Historic Preservation Act, as amended and accompanying Regulations (36 CFR 800) provide comprehensive guidelines to Federal Agencies regarding cultural resources and historic properties. In applying the National Historic Preservation Act we use what is called the "Section 106 Process." The Section 106 Process includes provisions nearly identical to the three subparts of 36 CFR 219.24 listed above. In successfully implementing the Section 106 Process, we are concurrently complying with the above referenced provisions provided in 36 CFR 219.24.

Please refer to the introductory paragraphs in the Heritage Resources section of Chapter 4 for a detailed description of activities for which we have and have not completed the Section 106 review process.

22. Roads

22a. Preface the RMOs with a clear explanation of "road status, service life, service level, funct. class, post harvest maintenance level" etc. in ways both the technical and lay reader can understand. (ADF&G, EPA)

FS Response: Comments noted. We have included complete descriptions of the RMOs in Appendix N of this Final EIS.

22b. On Unit and Road Cards: (EPA)

- Include names of streams/watersheds on unit and road cards.
- Show buffer areas around lakes on unit/road cards.
- Show locations of culverts/bridges, stream crossings, number of crossings, type of stream crossing.
- Show location of rock quarry sites and quantities to be removed at each site.
- Include water quality stream crossings, road class, service level, maintenance level, proposed future status, closure
- Include timing restrictions for Class I stream crossings, and wildlife timing restrictions.

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FS Response: The road and unit cards are intended to provide preliminary information to the people who will locate and lay out the roads and units during the implementation phase of this project. Some of the information you are asking for is not yet available. Although many control points have been established, road locations at this stage in the planning process are only approximate and represent a transportation corridor and not a finished route location. Because of this, exact information on stream crossings and quarry sites is unavailable and presenting estimates would be misleading. Contents of the road and units cards have been discussed with those individuals most likely to do the actual layout work. The information we are displaying is that which we feel is necessary for proper location and layout. Timing and restrictions will be made part of the timber sale packages. For additional information, see the specific resource sections in the EIS.

22c. Page 2-19; Include a discussion and maps on road maintenance (closures, openings, etc.) (SCS)

FS Response: See RMOs in Appendix D and Road Cards in Appendix N of the Final EIS

22d. Table 3-27; Show how many miles of existing road are presently open/closed. (USDI)

FS Response: All 51.3 miles are open to the public. See road condition statement in the paragraph just preceding table 3-27.

22e. Display the acreage of areas damaged by past roads which have washed away along stream corridors. (MHD)

FS Response: The washout areas have not been measured. Also see response to 11.h.

22f. Address road maintenance (see Ushk Bay Final EIS pg. 1-10) and effects on fish passage. (ADF&G)

FS Response: All temporary roads will have drainage structures removed. Roadbed and banks will be seeded with grass seed to prevent erosion. RMOs will be implemented for this project (see RMOs in Appendix D). Fish passage should not be inhibited by maintenance practices.

22g. Ensure proper maintenance of new and existing roads so that the sediment standard is not exceeded. (EPA, ADF&G)

FS Response: See RMOs in Appendix N

22h. Discuss the impacts of roads on bears and martens. (ADF&G)

FS Response: This information has been included in Chapters 3 and 4 of the Final EIS in the Wildlife sections.

22i. Address effectiveness of FS road closure policy to mitigate impacts on wildlife. (USDI)

FS Response: In cooperation with the Alaska Department of Fish and Game we have closed road to hunting and trapping in the Hoonah area. The result of this type of closure was a decreased harvest of bear and marten.

22j. Discuss mitigation of further erosion in areas where road reconstruction is planned. (MHD)

FS Response: Disturbance outside the existing road bed will be limited to clearing, ditch improvement and putting in drainage structures.

22k. The amount of road construction and reconstruction proposed to reach relatively small areas of timber is unacceptable. (BF)

FS Response: Comment Noted

22l. ADF&G wants to work with FS on RMOs in Schulze Cove. (ADF&G)

FS Response: RMOs are developed by the District Ranger and his staff in conjunction with the engineering staff and placed in the Draft EIS to display the road management strategies by alternative. RMOs are reviewed annually by the District Ranger and his staff to see if they still meet the current management intent for the particular area to which they refer. The RMOs can be changed to reflect management needs or correct management problems.

22m. Drop road 75831S as it is unacceptable as depicted on the road card. Road 75851 appears to run through a pond or lake. Clarify road location. (ADF&G, USDI)

FS Response: This was a mapping error that has been corrected. See Appendix N, Road Cards.

22n. Were alternative road locations considered that would lower the number of Class I stream crossings? (DEC)

FS Response: Although the goal of reducing adverse water quality effects is often achieved by reducing the number of Class I stream crossings, this may not always be the case. Crossings were selected to minimize effects on water quality.

22o. Page 4-9, Discuss direct and cumulative impacts of excavation of wetland overburden during road construction. Display total cubic yards removed and procedures for disposal. (USDI)

FS Response: Page 4-10 discusses impacts. Most road construction excavation is side cast. The roads for this project have not yet been designed. Therefore we do not have any estimate of excavation required. See also response to 22b.

22p. Reevaluate the need for additional new roads and LTFs. Helicopter yarding is preferred, although yarding costs are high. Analyze more helicopter yarding as an alternative method to reduce the need for additional roads. Carefully weigh the trade-offs between LTF and road construction, and helicopter logging with logs lowered directly to the water. Careful site selection is necessary to minimize impacts to existing resources. (EPA, USDI, ADF&G)

FS Response: Helicopter logging is proposed for 50 to 69 percent of the harvest acres in the action alternatives. It is not economically feasible to helicopter log flight distances exceed one and a half miles to a landing. In addition to initial yarding of logs, future road use and management intent must also be considered. Roads may be used for recreation and to support future sale entry. Free use timber and small sale programs may not be possible if the roads are not constructed.

23. Economics

23a. Include economically feasible volume in the proposed action. Add information regarding the economic efficiency of the proposed alternatives. Display the full financial cost of timber sale preparation, layout, road and LTF construction, and timber harvest and transportation, and compare these costs to the amount accrued from the sale of the timber. (KPC, BF)

FS Response: Refer to the Financial Efficiency Analysis in Chapter 4, Silviculture and Timber Management.

23b. Analyze the cost/benefit ratio for each of the alternatives. (BF, MHD)

FS Response: Please refer to the Financial Efficiency Analysis in Chapter 4, Silviculture and Timber Management. There has been no requirement for a benefit/cost analysis, in part due to the fact that many of the benefits and costs are associated with non-monetary values.

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23c. Export of our natural resources contributes to our national deficits. (MJJ)

FS Response: Export of natural resources can be beneficial to our country's balance of trade. Export of unmanufactured raw materials will contribute to international trade imbalances only if we reimport all of those same raw materials as manufactured goods. By law, all logs which come off lands on the Tongass National Forest, except cedar, must undergo at least primary manufacturing in Alaska before they can be exported. Logs produced from Northwest Baranof Timber sales must be similarly processed. This primary manufacturing provides jobs for Alaskans and promotes Alaskan businesses.

23d. How much would be bid for the timber? (BF)

FS Response: Please refer to the Economics section in Chapter 4.

23e. Market demand for this timber comes primarily from KPC so benefits to Sitka would be minimal. Furthermore, selling this timber to KPC will remove opportunity for a local wood products industry in Sitka in the future. Who will benefit from the sale of this timber? (BF, STA, BF, NJ)

FS Response: Timber from Northwest Baranof Timber Sales would not necessarily be sold to KPC. There are a number of independent sawmills in southeast Alaska which need to purchase timber for current year operations and to accumulate a supply of purchased but unharvested timber (volume under contract) to allow them to plan their flow of products, secure financing, and respond to market demand.

Although there are currently no known timber processors located in Sitka, potential businesses would also need to accumulate timber for operations. Businesses about to start could potentially bid for this timber in an effort to build stocks of raw materials for future operations. Not offering timber for sale in the Project Area could deter potential businesses from establishing a timber industry in Sitka.

23f. Page 3-76; Clearly state that receipts to communities from timber are not dependent on how much timber is logged in the community but on the size of the national forest landbase in the community. (SCS)

FS Response: Information has been included in the economics section of Chapter 3 to reflect this concern.

23g. Page 3-73; Subsistence should be included in the discussion of community economics. (SCS)

FS Response: On a "dollar per pound" basis, subsistence gathered food is extremely valuable to the economy of Sitka and Southeast Alaska. These figures, however, undervalue subsistence resources. The value of subsistence to individuals and communities is immeasurable. Tied to subsistence are the values of self reliance, self worth, and a sense of identity for individuals, cultures, and sometimes whole communities. To place a dollar figure on such values, however, would be very difficult and possibly insulting to some people.

23h. The DCs for economics, Sitka economics, personal economics, and community values omit subsistence as an important element. (SCS)

FS Response: Subsistence has been added to these sections of the Desired Conditions for the Project Area.

23i. Economic analysis deals only with timber. Include impacts to fish- and wildlife-dependent industries and users. All economic analyses in the Draft EIS were strongly biased in favor of the timber industry, while ignoring impacts to other uses. (THFC, SCS)

FS Response: Fish and wildlife dependent and other industries are described in detail in the economics section of Chapter 3 of the EIS. Effects to these industries are described in the Chapter 4 economics section. The number of timber jobs related to implementation of the various project alternatives have been displayed because these jobs are affected in a direct and quantifiable manner. It is much more difficult to directly assess the effects of

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project implementation on specific numbers of jobs in health care, government, service, fish and wildlife dependent, and other industries. Economic trade-offs of harvest versus no-harvest in these industries are less quantifiable. Such displays of these effects would be misleading. Effects to these industries have, however, been qualitatively identified in Chapter 4 of the EIS where appropriate.

23j. Table 2-8; Include economic information for jobs other than timber-related, and including information about the economic and social value of subsistence. (SCS)

FS Response: Table 2-8 is intended to be a short summary comparison of alternatives and is not intended to be a comprehensive assessment of economics considerations for the Project Area. See the economics sections of Chapters 3 and 4 for more information.

23k. Table 2-9; Delete jobs and wages from this table, as they are not environmental consequences. (SCS)

FS Response: The table was incorrectly labeled. It is a summary of the comparison of effects of the alternatives. The table has been renamed in the Final EIS.

23l. Add red alder as a commercial species. Red alder is well-suited for millwork, paneling, pallets, furniture, and other commercial purposes. (MHD)

FS Response: Red alder is not considered a commercial species in Alaska because there has been no market demand for it here at this time. It is sold as a commercial species in the Pacific Northwest where it is marketable. Past inquiries from potential purchasers have never resulted in economic considerations. The red alder that we have in Northwest Baranof is generally not of sufficient size to offer commercially. It is harvested by individuals for personal use. The FS has and would consider any commercial offer of alder to interested buyers. Red alder remains a potential future commercial species.

23m. Evaluate carefully the economics of helicopter logging because the value is questionable. (GSW)

FS Response: Helicopter logging was analyzed based on existing appraisal values in similar sales. The appraisals were done using FS Handbook values to determine associated costs, and the HELIPACE computer program to determine yarding costs. These values were adjusted to represent the longer average yarding distances involved with the Project Area. See the Financial Efficiency Analysis of Timber Harvest portion of the Silviculture and Timber Management section of Chapter 4 for additional information.

23n. Logging Northwest Baranof threatens subsistence, tourism, and fishing. The economy of Sitka is already hurting. (STA)

FS Response: Logging in the Project Area is not expected to be detrimental to fish populations. Effects to tourism and subsistence are expected to be within the parameters of the management direction set for this area by the TLMP (as amended). The Northwest Baranof Project has been proposed to implement direction contained in the TLMP. (See the purpose and need in Chapter 1 of the EIS.) Discussions concerning the appropriateness of this use for the Project Area fall outside of the scope of project-level planning and should be addressed at the forest planning level.

23o. Continued removal of lands from the timber base for environmental and local subsistence considerations is further eroding a declining timber economy and increasing unemployment in Southeast Alaska. (JWR)

FS Response: Some decisions of the FS have not actually removed lands from the timber base, but are perceived as doing so. Implementation of 500-foot shoreline and 1000-foot estuary buffers, and deferrals for possible implementation of HCAs are often mistakenly viewed as removing lands from the timber base. In reality these are decisions by managers to defer actions in these areas until a later date. Often FS managers perceive there will be a shift in management direction from Congress or the President. In order to continue projects with the least

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likelihood that changes in management direction will waste effort or cause delays, actions in controversial areas may be deferred. In addition, deferral will ensure that proposed management activities will not preclude possible future management decisions.

The Tongass National Forest is managed in compliance with a number of laws and regulations as outlined in Chapter 1 of the EIS. Under the Multiple-Use Sustained Yield Act of 1960, National Forests are established and administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes. Although not every area of the forest can accommodate every use at all times, the overall management of the forest is for multiple use. Some of these laws which regulate the management of the Tongass National Forest have removed land from the timber base to provide for subsistence, the protection of the environment, and for other management reasons.

23p. The Project Area should provide over 150 mmbf of timber to meet market demand. (BB)

FS Response: Comments noted. Our analysis does not indicate that this much volume from this area at this time is necessary to meet market demand. Other considerations and issues identified during scoping limited the range of alternatives considered in detail to a lesser amount for this project.

24. Cumulative Effects

24a. Analyze cumulative impacts in Chapter 2. (SCS)

FS Response: Chapter 2 of the EIS is not intended to analyze cumulative impacts; it is a summary and comparison of alternatives. Cumulative and long-term effects are addressed for each resource in the resource sections in Chapter 4 and, through reference, by the TLMP (1979, as amended).

24b. Cumulative effects are not adequately analyzed in the Draft EIS. The time period displayed for cumulative effects is too narrow. Display what land areas are included in consideration of cumulative impacts. (SCS)

FS Response: Cumulative and long-term effects are adequately displayed for each resource specialty in Chapter 4 of the EIS. Additional information is included in the planning record. Each resource may require a different scope of area and time frame to properly analyze cumulative and long-term effects. Areas, time frames, and contents for effects have been defined or displayed for each resource as deemed necessary by the resource specialist. For more information about cumulative effects, see the introductory section of Chapter 4, Environmental Consequences.

24c. Include effects of reasonably foreseeable future actions in the Project Area or neighboring areas. Page 4-2; Cumulative effects from the West Baranof & Kruzof landscape analysis were not included in this analysis, therefore the analysis is inadequate. (ADF&G, SCS)

FS Response: Reasonably foreseeable future actions in the Project Area and neighboring areas have been considered in the cumulative effects analysis for each resource. The West Baranof & Kruzof Landscape Analysis has been postponed for the foreseeable future..

24d. Page 4-2; The timeline for cumulative effects analysis differs from that on the previous page . (SCS)

FS Response: After reviewing these two pages we discovered that the text was confusing and did not convey the desired message. These sections have been rewritten for the Final EIS. Briefly, the intention on the first page was to define "reasonably foreseeable future" for determining how far into the future we could reasonably look for determining cumulative effects. On the second page we further identified considerations for determining cumulative effects such as historic logging, the effects since 1956 from the APC contract, and the effects of other planned timber sale projects whose Records of Decisions (RODs) have been signed. There was no intent to limit

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analysis of cumulative effects to things which occur only in the time frame from the ROD of this project to 2008. All relevant previous and current activities and conditions are also considered.

24e. Point out the long-term consequences to the ecosystem of LUD III or LUD IV management. (ADF&G)

FS Response: Analysis of the consequences of LUD III and LUD IV management is beyond the scope of project-level planning. The TLMP, as amended, determines the land use designation (LUD) for the VCUs in the Project Area. Consequences of these designations were analyzed in the EIS for the TLMP.

24f. Page 4-29; We believe the assertion that “all wildlife are expected to be above minimum viable levels within the Ecological Province” is in error because cumulative effects analyses have not been completed for other projects (such as Kelp Bay, Southeast Chichagof, and Ushk Bay). (SCS)

FS Response: We disagree. We expect that old-growth retention areas and other areas that will not be harvested in this Project will maintain wildlife viability for the foreseeable future. See Chapter 4 in the Final EIS for clarification.

24g. Too much timber has been harvested in the past 100 years. Timber harvest contributes to the greenhouse effect. (STA)

FS Response: The TLMP determines the Allowable Sale Quantity (ASQ) for each management area which will meet the desired objectives for that area. Analysis of the greenhouse effect is beyond the scope of this Project.

25. Unit and Road Cards

25a. None of the Unit Cards include the subsistence ratings developed with ADF&G. (ADF&G)

FS Response: The road and unit cards are used to communicate to the unit layout and road design personnel the intent of the EIS for the particular roads and units that are in the ROD. The intent of the unit card is not to communicate subsistence ratings. The cards are displayed in the EIS to provide site-specific information for individual units and roads for the decision maker and other reviewers. The high and very high subsistence values (FS version) will be added to the unit cards in the Final. All subsistence ratings will be considered in the final decision.

25b. The harvest recommendations on the Unit Cards in Volume II of the Draft EIS are, in many cases, impractical from a layout/boundary standpoint and will result in boundary adjustments during layout. (MHD)

FS Response: Unit boundaries were field verified by several different resource specialists. Efforts were made to locate actual and feasible boundaries at this time. Any possible adjustments to units that may occur at the time of timber sale layout will be evaluated for significance. Those that are determined to have potential resource concerns will be evaluated with further NEPA analysis.

26. Other

26a. The ID Team did not spend sufficient time on the ground in the Project Area to be thoroughly familiar with its unique features. Further, the ID Team relied too heavily on the use of computers and photo interpretation in the analysis. Your wildlife people need to leave their desks occasionally. (MHD, MB1)

FS Response: Comment noted.

26b. The project should be cancelled. (SCS)

FS Response: Comment noted.

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26c. Add information necessary for DGC to determine consistency with the ACMP. (ADF&G)

FS Response: Comment noted. We are negotiating with DGC.

26d. Use the best available science in planning this project. (SCS, PE)

FS Response: Comment noted.

26e. Print ALL your research, taking into consideration the work currently being done by ADF&G biologists. (CJ)

FS Response: The Council on Environmental Quality (CEQ) provides direction for implementing the Environmental Policy Act. This direction includes requirements for EISs. CEQ 1500.1(b) states that "...NEPA documents must concentrate on the issues that are truly significant to the action in question rather than amassing needless detail." CEQ 1500.2(b) requires agencies, to the fullest extent possible, to "reduce paperwork and the accumulation of extraneous background data." CEQ 1500.4(b) requires agencies to reduce excessive paperwork by "preparing analytic rather than encyclopedic environmental impact statements." CEQ 1502.8: "Environmental impact statements shall be written in plain language...so that decisionmakers and the public can readily understand them." CEQ 1502.15: "The descriptions (of the affected area) shall be no longer than is necessary to understand the effects of the alternatives." and "Agencies shall avoid useless bulk in statements and shall concentrate effort and attention on important issues." CEQ 1502.21: "Agencies shall incorporate material into an EIS by reference when the effect will be to cut down on bulk without impeding agency and public review of the action. No material may be incorporated by reference unless it is reasonably available for inspection by potentially interested persons within the time allowed for comment."

The ID Team considered the intent of the NEPA, the CEQ regulations, and public comments regarding the excessive length and overly technical writing style of previous EISs in developing the Northwest Baranof EIS. While much of the analysis was summarized for the Draft and Final EISs, the Project planning record, which contains all of the research and background information for the Project, is available for public review at the Supervisor's Office in Sitka, and individual documents from the planning record may be made available on request.

26f. Page 2-2; The list of ecological conditions the FS professes to protect is unacceptable because it is incomplete. (SCS)

FS Response: "We have identified a number of specific actions that we could take to apply emerging ecosystem management techniques. We used these actions as a framework to develop the proposed action and alternatives." (from Chapter 2). These are not "ecological conditions that we profess to protect". They are actions we chose to take to develop management strategies and alternatives.

26g. Page 4-1; The "assumptions" listed for the effects analysis (bullet statements) are ambiguous. (SCS)

FS Response: "The following assumptions were made to assess reasonably foreseeable effects. These assumptions reflect current management/technology of National Forests and provide a uniform approach to estimating effects of timber harvest and road construction." (from Chapter 4). Upon reviewing the listed assumptions, we feel that they were clear and should be easily understood by most members of the public, and we find no reason to expand on them. We have no way to predict the future actions of Congress, or the courts. If you have further questions, please contact us.

26h. It is the FS's responsibility to meet Native objectives. (STA)

FS Response: Thank you for your comment. We do not agree that we must meet all Native objectives, however, we do recognize that the United States Government has a unique legal relationship with Native American Tribal

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Governments (Clinton 1994). It is our policy to maintain governmental relationship with Federally-recognized Tribal Governments (USDA).

26i. The STA Traditional Foods Program coordinator wishes to continue the ongoing government-to-government relationship with the FS. The Tribe wishes to be involved in FS decision making. The FS will gain a better understanding of the beliefs and practices of the members of the Sitka Tribe. (STA)

FS Response: Thank you for your comment. We are committed to maintaining and increasing the quality of our ongoing government to government relationship with the Sitka Tribe of Alaska.

26j. The FS needs to develop a mechanism by which it can retrieve site-specific information for future project planning. This is a significant, long-term problem, and is very costly in terms of duplicated work. (ADF&G)

FS Response: Comment noted.

26k. The Draft EIS does not provide enough information for the public and the decision maker to make a decision. (SFS)

FS Response: We disagree. The Draft and Final EIS provide a level of detailed information that is sufficient for the decision maker to make a reasonable decision and for the public to provide meaningful comments.

26l. The word "harvest" should not be used at all regarding old-growth logging. (SCS)

FS Response: Comment noted.

27. Editorial Suggestions

We thank you for the following comments. They are all "editing" type suggestions which we have incorporated, where appropriate, into the Final EIS. Therefore, individual responses to these comments have not been provided.

Clarify authority of Subsistence Board (it does not set season or bag limits for nonsubsistence hunting). (USDI)

Change heading "Hunting, Fishing, and Subsistence" to "Subsistence and Recreational Harvests." (USDI)

Page 4-53; Subsistence use is implied as deer and plant resources. Add other land mammals, sea mammals and fish. (USDI)

Appendix I; 50 percent higher is not the same as twice what was reported. Fix this in the text. (USDI-

Appendix I page 11, paragraph 4; change "based limited use" to "based upon limited use." (USDI)

Page 4-52; Identify the "worst case alternative" referenced in paragraph 1. (USDI)

Appendix I, graphs on deer supply and demand; Repeated reference to the "worst-case" and "preferred" alternatives are not identified. (USDI)

Page 4-21, paragraph 1, sentence 4; Statement is incorrect. Numbers do not represent the number of deer present in each WAA at any time. (USDI)

Page 2-14; Suggested wording, "The short- and long-term effects of LTF use on the marine ecosystem will be minimal." (USDI)

Include names of watersheds and streams on maps. (EPA)

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Page 2-14; This definition of old growth differs from other definitions in the Draft EIS. (SCS)

Display on maps the locations of all places referenced in the project narrative. (ADF&G)

Table 3-1; Indicate that VCU acres include only the portion of the VCU in the Project Area and not the entire VCU. (SCS)

28. Responses to Select Subsistence Testimony Comments

28a. It appears to me the timber planned for this sale is predominantly the higher end of Volume Class 5. (LE)

FS Response: The majority of the proposed acres to be harvested in each action alternative are actually mapped as volume class 4 (refer to Chapter 4, Silviculture and Timber Management section). Each volume class contains a range of possible volume for those acres mapped within that class (refer to Chapter 3, Silviculture and Timber Management section). Volume class 4 is 8,000 to 20,000 bf/ac (board feet per acre), while volume class 5 is 20,000 to 30,000 bf/ac. We have mapped the forest by these ranges. How many of the acres within a given volume class are closer to the high or low end of that range is unknown.

28b. Steve Brink (TLMP Team Leader) stated during a public meeting that deer populations are not habitat dependent. I find it difficult to trust anybody who would say something like that. (RR)

FS Response: Taken in context, Mr. Brink was pointing out that habitat is only one factor in determining deer populations. Weather, hunting pressure, and predation are other important factors which affect deer populations.

28c. We should not be ignoring or pushing aside problems with habitat destruction which are now being faced in the Lower 48. (CP)

FS Response: We have undertaken considerable analysis regarding the effects of the alternatives on fish and wildlife habitat. We have not taken these potential effects lightly and they will be given serious consideration in the final decision.

28d. By selecting alternative 5 we gain extra time and extra time is more value. We can collect more data and the timber will be worth more later. (WMW)

FS Response: Comment noted.

28e. Logging makes it difficult to get through the woods. Clearcuts are difficult to walk through. (RR)

FS Response: We disagree. Logging usually does not make it difficult to get through the woods. Regeneration, on the other hand, can be very difficult to walk through.

28f. The major percentage of proposed harvest in Northwest Baranof is even-aged harvest. It is time to start using selective harvesting methods. (NG)

FS Response: While it is true that most of the harvest proposed for this project is even-aged, clearcut harvest comprises less than half in any of the action alternatives. Group selection, an uneven-aged prescription, is proposed for 12% to 16% of the acres. In addition, the Northwest Baranof Project proposes the highest percentage of overstory removal and group selection harvest methods of any similar timber sale on the Tongass National Forest to date. Prescriptions were designed to best meet the objectives of each stand in conjunction

with landscape objectives. See also Table 2-1 and the discussion of Harvest Methods in Chapter 2 of the Final EIS.

28g. Desired condition statements do not reflect reality of planned harvest in terms of deer habitat reductions. (BE)

FS Response: We do not project significant reductions of deer habitat in the Project Area as a result of any action alternative.

28h. The section Economic and Social Quality must be expanded to include economic and social effects of reductions in fish and game and other resources due to logging of old-growth forest. Presently, this section discusses the employment and income related to logging, but with no analysis of accompanying losses to other users. Where does income from logging go? Does it go to residents of Sitka, residents of Southeast Alaska, or out of state residents? The economic effects of logging old growth on users of the forest should be related to the communities where the people live.

The meaning of social quality in this section is not clear. Effects on social quality should include conflicts between loggers and traditional users of the area, and be related to the question as to who loses and who gains by the proposed logging.

Subsistence is an economy within itself. Additional loss of habitat effects our subsistence economy. (BE)

FS Response: Through the use of Best Management Practices (BMPs), fish populations are not expected to be affected by any action alternative (see the Fish and Water; and the Hunting, Fishing, and Subsistence sections of Chapter 4). As such, we expect there will be no economic loss related to the use of fish because we expect no reduction of fish populations. As stated in the Hunting, Fishing, and Subsistence section of Chapter 4, the effects of this project, by itself, are expected to be insignificant for all game resources including deer. Although we recognize that cumulative effects of past, present, and future activities in the vicinity of the project area may cause a reduction of the habitat capability for deer, these reductions are considered to be minor compared to other factors affecting deer populations. These factors include what appears to be unsustainable harvest levels, the effects of severe winters, and the effects of increased human population and the corresponding demand for deer. These factors will likely be the primary cause of any future restrictions on the subsistence or other consumption of deer. The effects of these factors are beyond the scope of this project plan, however these effects are expected to be relatively the same for all alternatives and, therefore, should have little effect on the selection of an alternative. For additional information about the economics of subsistence, see the Forest Service response to public comment 23g. For effects to Outfitters and Guides, see the Recreation section and the Economics section of Chapter 4.

As stated in the Economics sections of Chapters 3 and 4, the primary area of economic influence of the Project Area is Southeast Alaska. Listed in the Purpose and Need is that timber from this project is “to help meet annual market demand for the timber industry in Southeast Alaska and to provide local employment in the wood products industry throughout Southeast Alaska.” The idea that economic benefits of logging old growth should go to the communities where that old growth is removed may be popular. It does not, however, take into account that the Tongass National Forest is subject to the economic, social, and political pressures of a nation, and the laws and regulations that guide its management.

The Social Values sections of the Final EIS point out that there are social conflicts concerning the uses of the Tongass National Forest. Determining “social quality” is nebulous and subjective. As stated in Chapter 4, the social impacts of the alternatives and their magnitude vary by the point of view and the value system of the individuals and groups affected. These conflicts will not be black and white, but will lie along a continuum. Many loggers are also subsistence users who see little conflict between their chosen profession and their subsistence use. The question of who loses and who gains cannot be answered simply, because there is no single loser or winner.

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28i. Prior to 1954 there were 19,000 acres of Volume Classes 6 and 7 timber. Today there are 600 acres. Therefore, we have lost 97 percent of the best deer habitat already. Clearcut logging has already taken 97% of the best deer habitat or about 50 percent of all the forest from the project area. (BE).

FS Response: Prior to 1954, there had been no volume class mapping on the Forest. Therefore there is no method to determine how much of the old growth was high volume (volume classes 6 and 7) prior to 1954, and consequently no method available to compare the change from prior to 1954 to the present. If we assume that all of the past harvest within the Project Area (12,286 acres) occurred in volume class 6 and 7 forest, there would have only been 13,460 acres (12,286 past + 1,174 current) of high volume forest within the Project Area prior to 1954. This does not match your figure of 19,000 acres. We are unable to determine how you obtained your numbers.

28j. Use of the term "backyard" is inappropriate because of the demeaning aspects of the NIMBY phrase. (BE)

FS Response: We're sorry you find the term offensive. However, we feel the term was used appropriately, as evidenced by several comment letters in which the authors refer to the Project Area as their "back yard."

28k. The Forest Service has recently been giving talks about timber harvest that may be misleading to the public. (WM)

FS Response: The Forest Service held public meetings and open houses in conjunction with the release of the Draft EIS. Furthermore, throughout the planning process we have attended meetings with a variety of organizations. At all of these meetings we have provided information about the Northwest Baranof Project. It is unlikely that everyone would agree with everything we said at these meetings. Furthermore, we have been available for discussion if anyone is confused about the information we have presented.

28l. We should not be robbing subsistence values, particularly with the budget cuts facing the Indian Health Service. (HD)

FS Response: Budgets are beyond the scope of this project.

28m. In the study I was involved with of subsistence hunting and fishing around Sitka for the Department of fish and Game years ago....roughly 76 percent of the households in Sitka have a least one deer hunter in residence... Conservatively, 80% of the households have at least one person who participates in subsistence fishing. This community has an extraordinary relationship to our surrounding environment because of our subsistence economy and our subsistence life land subculture. (RN)

FS Response: We agree. We believe the results of the study to which you are referring were published in a report entitled "Resource Use in a Small Alaska City -- Sitka" compiled by George Gmelch and Sharon Bohn Gmelch with the assistance of Richard K. Nelson, 1985 (ADF&G Technical Paper No. 90). The 1983 survey revealed that in 55 percent of all households, at least one person had hunted during the past 12 months. It also revealed that in 66 percent of all households, at least one person hunted during the past 5 years (1985 p. 47). We have also used 1987 harvest statistics compiled in ADF&G's Division of Subsistence Community Profile Database (printed in 1992). This database was compiled from the results of the "Tongass Resource Use Cooperative Survey" (TRUCS) directed in early 1988 by the University of Alaska's Institute of Social and Economic Research. The Community Profile Database revealed that at least one person in 19 percent of all Sitka households hunted during 1987. Although there are inconsistencies from one study to the next, all of these statistics support your comment about the importance of subsistence to Sitka residents. We used more than one source of information to complete our analysis. For and additional information on how we completed our analysis, please see the Subsistence sections of Chapters 3 and 4 in the Final EIS.

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28n. Subsistence is more than just meat on the table. (RR) Subsistence hunting and fishing are really the core of my life. I will defend my hunting and my fishing as dearly as I'll defend anything that matters to me in my life. It is the center of my existence. It's why I live here. Food is what connects me to this place. Food is what binds my heart and my soul to this place that's my home. and that's why I am so concerned about the future here and how we treat this environment that sustains us in so many different ways. (RN)

FS Response: Thank you for your eloquent comments. We identified subsistence as a key issue early in the planning process. We recognize that the subsistence lifestyle involves deeply-held values, attitudes, and beliefs of both Native and non-Native people (see subheading "Subsistence" under the Section "Issues to be Addressed" in Chapter 1). We do recognize that there is a significant possibility of a significant restriction when the action alternatives together with other past, present, and reasonable foreseeable actions are considered in a cumulative manner. Please see the introduction to Appendix M: Subsistence Testimony, and the Record of Decision for a review of our ANILCA Section 810 Subsistence Evaluations and Findings, and the discussion of how subsistence concerns were considered in the Record of Decision.

28o. Would like to see a display of impacts on different type old growth. Would like to see it broken out by volume class. Refers to table on p. 3.24. (LE)

FS Response: Please see the response to 28i.

28p. Many of the charts, tables and models in the document (including the Habitat capability models) are based, in part, on the Forest Service's GIS TIMTYP layer. The Forest Service admits that there is a 50 percent error factor in TIMTYP. Why is the Forest Service continuing to use make conclusions based on inaccurate GIS data. (FS)

FS Response: We assume that you are referring to the Brickell Report when you refer to the 50 percent error in TIMTYP. This report did find that TIMTYP has a certain level of error and based on a sample of only five plots, the error was 50 percent. However, they also determined that the sample size was too small to place any significance on this evaluation. They were unable to determine if the 50 percent error was solely based on TIMTYP, the sample design, or a combination of both. Therefore it has not been determined how much error is expected using TIMTYP. The GIS TIMTYP data layer was created for use at the forest level. Accuracy of this layer is expected to be less when applied to site specific projects. The Forest Service recognizes that there is some error involved in using the TIMTYP layer depending on how it is applied, and we are currently analyzing some additional approaches to improve the accuracy of this data at the Forest Plan level that may also eventually be applied at the project level. However, TIMTYP is currently the best source of information for this use at this time.

28q. During a radio call-in a Forest Service operative stated that a 2 percent reduction in deer habitat equates to two deer. (FS)

FS Response: There was not Forest Service employee participating in the radio call-in. As a result, we are unable to address this comment.

28r. In Chapter 3 page 22 the Forest Service talks about a 2, 4-D spray used in Nakwasina River in June 1968 to inhibit red alder growth. It mentions a study done on the effect of the spray on Dolly Varden char, coho salmon and aquatic insects. The reference "study" was listed in the lit cited appendix as a "memo" to a timber staff manager. That was not a very good reference. (WMW)

FS Response: Thank you. The referenced study is now correctly listed in the Literature Cited section of the Final EIS (see Sears and Meehan 1971).

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28s. In completing the wildlife analysis the Forest Service used data from Wildlife Analysis Areas larger than the planned Project Area. By using this data the Forest Service is intentionally flooding the equation or skewing the data to the land side of things. (FS)

FS Response: The data presented in the Wildlife analysis includes only lands within the Project Area. The Subsistence analysis includes some lands outside of the Project Area so that the data can be accurately compared to ADF&G's hunting and subsistence data, which is analyzed by WAA. For population estimates and effects within the Project Area only, please refer to the Wildlife sections of Chapter 3 and 4 in the Final EIS. For a comparison of population estimates to actual hunter success, please refer to the Subsistence sections of Chapters 3 and 4.

28t. Chapter 4, p 53 states that there is a significant possibility of a significant restriction of subsistence use of deer for Sitka residents. It further states that it may be possible to minimize this restriction by regulating non-subsistence uses of areas most heavily used by Sitka residents for deer hunting. (FS).

FS Response: We have clarified our ANILCA finding in the Final EIS. The activities of the action alternatives, by themselves, do NOT present a significant restriction in Subsistence use of deer. However, there is a significant possibility of a significant restriction when the action alternatives together with other past, present, and reasonable foreseeable actions are considered in a cumulative manner. This cumulative impact is independent of whether any of the action alternatives are implemented. It is a consequence of projected growth in human populations and cumulative reductions of habitat capability from past harvest. It is true that during a winter of high mortality or during the years following a winter of high mortality, ADF&G and the Federal Subsistence Board can and have implemented reduced season lengths, reduced bag limits or season closure restrictions or a combination thereof. The Federal Subsistence Board has closed hunting in this area to non-rural hunters in the past. Please see Subsistence section in Chapter 4.

28u. The loggers and the logging companies are not going to have to pay the price for reduced deer populations brought about by the sale. The guy who goes hunting in the woods to provide some subsistence and some sustenance for his family will pay for it. (FS)

Logging has taken, and is taking, and will continue to take subsistence resource with no recompense to present or future subsistence users. (BE)

Areas marked as important subsistence use areas by tribal elders on a series of overlays are under the preferred alternative and are scheduled for logging. (JP)

Alternatives 1 through 4 will substantially impact my subsistence use in the areas that are logged. (RR)

FS Response: ALL subsistence users will experience some restriction to subsistence due to the cumulative effects of past, present and future actions and conditions in the Project Area. Many of these users will be residents of Sitka, however, some will also be residents of logging camps. Please see 28h for additional discussion on Social Values.

The Alaska National Interest Lands Conservation Act (ANILCA) requires that the Forest Service determine if proposed activities may significantly restrict use of subsistence resources. If such a finding is made, then ANILCA requires public hearings and determinations regarding actions to minimize impacts prior to proceeding with a project. Chapter 4 of the Final EIS contains the ANILCA 810 subsistence analysis. Please see the subheading "ANILCA Section 810 Subsistence Evaluation and Findings" under the section heading "Findings Required by Law" in the Record of Decision (ROD). It documents the three required subsistence determinations made by the Forest Supervisor. These are:

- i. the significant restriction of subsistence uses is necessary, consistent with sound management of public lands,

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- ii. the proposed activity involves the minimum amount of public lands necessary, and
- iii. reasonable steps will be taken to minimize adverse impacts on subsistence uses and subsistence resources resulting from the action.

Please see the section heading “Reasons for Decision” in the ROD for a detailed discussion of how the Forest Supervisor took the subsistence needs of Sitkans into consideration as he formulated the selected alternative.

28v. The planning team leader or Jim Franzel should assign some homework to the people on the planning team. They should watch a movie that came out in the 1960s called “The Sand Pebbles.” The planning team’s mission seems to be the same as the San Pablo’s; to fly the flag and put smoke up the stack. (LE)

FS Response: Thank you for your suggestion. The Recreation Planner on the ID Team was familiar with the movie. He purchased a videotaped copy and the team met after work hours to watch the movie and eat pizza. The team disagrees with your evaluation of our efforts, however we did identify with the character of Po Han, who was hung from a tripod and tortured simply for having a job that he enjoyed with an organization the other Chinese did not like.

Appendix M

Subsistence Hearing Transcripts and Responses

Subsistence Testimony

Response to Individual Comments

The following people provided written or oral subsistence testimony during the 59-day comment period:

Nick Goodwin (NG)
Eric Stromey (ES)
Valorie Nelson (VLN)
Robert Ellis (RE)
Christine Young (CY)
William Miller (WM)
Helen Drury (HD)
Jude Pate (JP)
Richard Nelson (RN)
Steve Stringham (SS)
Don Muller (DM)
Florian Sever (FS)
Robert Reid (RR)

William Mark Wilson (WMW)
Larry Edwards (LE)
Claire Johnson (CJ)
Larry Trani (LT)
Anita Lange (AL)
Cheryl Pritchard (CP)
Herman Kitka (HK)
Charlie Fox (CF)
Gary Olson (GO)
Brian Brown (BB)
Brent Fagan (BF)

This appendix contains the transcripts of the testimonies provided by the public during the ANILCA Section 810 hearings held in Sitka on September 11 and September 27, 1995. It also contains all written testimony received. We have responded to the testimony using the following procedure:

- We read through all of the transcripts and marked lines in each defining key comments.
- Since most of the comments were similar to those already listed in Appendix K - "Response to Public Comments" we did not summarize individual comments except in a limited number of cases. Instead, we have provided cross references to comments and responses listed in Appendix L. Please note that we have frequently referenced *responses* that are appropriate for the ANILCA comment and in some cases only a portion of the response is relevant. The comments themselves may not be identical.
- For those comments for which there is no appropriate response in Appendix L, we have created an additional subheading. These are listed under the subheading "28: Responses to Select Subsistence Testimony Comments".

Please see the Subsistence sections of Chapters 3 and 4 for further information on ANILCA Section 810 Subsistence Evaluation Findings and a discussion of how the Forest Supervisor will consider these and other subsistence comments as he selects an alternative for the Record of Decision (ROD).

HEARING PARTICIPANTS

U.S. FOREST SERVICE REPRESENTATIVES:

Michael Fox, Hearing Officer
Jim Franzel, Sitka District Ranger
Jim Thomas, Team Leader
Cindy Hartmann, Team Member

PUBLIC TESTIMONY PROVIDED BY:

Don Muller
Florian Sever
Steve Stringham
Larry Edwards
Claire Johnson
Robert Reid
Larry Trani
Anita Lange
Cheryl Pritchard
Herman Kitka
William Mark Wilson

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5, 37
10, 30, 48
14, 37
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22, 44
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29, 33
35
36

United States Department of Agriculture
Forest Service
Sitka Ranger District
204 Siginaka Way
Sitka, Alaska 99835

MATTER: Northwest Baranof Draft Environmental Impact Statement
Alaska National Interest Lands Conservation Act (ANILCA)
Section 810, Subsistence Hearing

DATE: September 11, 1995

TIME: 7:00 p.m. to 9:00 p.m.

PLACE: Alaska Native Brotherhood Hall
Katlian Street
Sitka, Alaska 99835

TRANSCRIPT PREPARED BY:

Woods & Company
PO Box 6037
Sitka, Alaska 99835
(907) 747-7400

KD 579
HSEP 95
NWB 2h

1 BY THE RECORDER:

2 This is tape 1, side A, Forest Service subsistence hearing;
3 September 11, 1995, Northwest Baranof Timber Sale.

4 BY MR. FOX:

5 This is a public hearing for the ANILCA 810 Section for
6 subsistence for the Northwest Baranof Draft Environmental Impact
7 Statement. My name is Michael Fox and I have been designated by the
8 Forest Service as the Hearing Officer for this proceeding. I would
9 like to welcome you and express our appreciation for your interest
10 and effort to be here tonight.

11 For the record, today is Monday, September the 11th, 1995. The
12 time is 7:01 p.m. This hearing is being held in Sitka, Alaska at the
13 Alaska Native Brotherhood Hall. The purpose of this hearing is to
14 get your views on how the alternative proposed for the project may
15 affect your subsistence use of the Tongass National Forest. Other
16 comments about the plan will also be accepted. Now, the meeting
17 hours are from 7 to 9 p.m. If you have not done so, please sign in
18 and clearly print your name and who you are representing.

19 While giving testimony, please sit near the microphone so your
20 testimony can be recorded and state and spell your full name. All
21 testimony will be limited to 10 minutes. Excuse me. If you wish to
22 provide additional information, you will be given the opportunity to
23 do so after everyone has -- has a chance to present their views.
24 Information about the plan and the various alternatives uh -- were
25 available at the open house preceding this hearing.

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1 During the hearing, questions will not be accepted other than
2 those concerning hearing procedures. Written testimony will be
3 accepted until October 2nd, 1995. Please mail written testimony to
4 the Northwest Baranof Planning Team, Jim Thomas, at 204 Siginaka Way,
5 Sitka, Alaska 99835. The information is all included on one of the
6 handouts at the back as well as some forms for providing written uh -
7 - testimony if you're -- uh -- interested.

8 This is an informal hearing which means there will be no
9 swearing in and no cross-examinations, no questions. Okay.

10 The first person to give testimony will be Don Muller. Right.
11 You can come on up to the front Don. Thank you.

12 BY MR. MULLER:

13 Hi. My name is Don Muller. Um -- my comments will be short and
14 I'm gonna combine a comment on the subsistence use with a comment on
15 the plan in general. Um -- on the opening page to the Summary of the
16 EIS, the statement is made about the fourth paragraph down, the draft
17 EIS concludes that there is a significant possibility of a
18 significant restriction on subsistence use of deer. I guess from a
19 simple-minded sort of approach, I guess I would like to ask why this
20 will be done if there is that significant possibility. It seems that
21 in a -- in an agency document when the admission is made that there
22 is going to be harm, then usually the harm is much greater than is
23 admitted to in the document. So I would say that you should not take
24 that risk and that you should throw out this document and do the no
25 action alternative. Thank you.

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1 BY MR. FOX:
2 Our next person to give testimony will be Florian Sever.
3 BY MR. SEVER:
4 For the record, my name is Florian Sever and uh -- I would like
5 to I guess begin by saying that -- ah I'm in favor of uh -- the no
6 action alternative. Basically, for the uh -- for the simple reason
7 that I believe that this uh -- this project does not comply with
8 ANILCA at all and uh -- for a variety of reasons which I'd like uh --
9 to point out a few from uh -- the EIS. Uh -- in just starting at the
10 -- at the first page that I have marked is Chapter 4, page 4, under
11 the topic of caves. And uh -- to quote from the document, since we
12 did not locate any Caves or know that any exist within the Northw --
13 Northwest Baranof project area we don't expect any direct, indirect,
14 or cumulative effect on these resources. Uh -- this shows that that
15 there has been ad -- inadequate work on the ground and that the carst
16 (sic) does exist within the project area and it was either unreported
17 or undiscovered during ground surveys. So uh -- right off the bat, I
18 think that was inadequate.
19 And then to go on to Chapter 4, page 45, under Hunting, Fishing
20 and Subsistence it says under Hunting quote, the availability of
21 wildlife for hunters and trappers could be affected by the proposed
22 action in the following ways. Number one, reduced habitat capability
23 could dec -- decrease availability over time. Well, I say its
24 guarantees that uh -- uh -- decrease availability, period. Number
25 two, new roads could increase competition. New roads will increase

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1 competition and that means that an already depleted supply of deer
2 will even become more depleted. Three, the presence of resident
3 logging camps could temporarily increase demand for wildlife. Well,
4 it certainly will, and in a -- in an area that is already depleted as
5 I said previously, it'll uh -- virtually uh -- insure the lessening
6 of wildlife subsistence values, in particular, deer, and I believe
7 salmon and steelhead too, myself.
8 Another uh -- quote from Chapter 4, page 45, uh -- is quote, it
9 is important to remember that the habitat capability models developed
10 to measure only the effects of clear cutting. Over story removal and
11 group selection is proposed in the Northwest Baranof project are not
12 accurately represented. Well, if this EIS is based on inaccurate
13 representations, then I say it's invalid. As a result, the compari--
14 quote, the -- as a result the comparisons we make in this chapter
15 to actual harvest or population estimates are not accurate. That's
16 admission that this document is not accurate, and uh -- I think that
17 the no -- no action alternative is called for on that basis.
18 Ah -- Chapter 4, page 46, under Environmental Consequences
19 quote, habitat capability for Sitka black-tail deer does not appear
20 sufficient to support a population capable of sustaining the average
21 level of harvest from 1987 to 1993 under any of the alternatives,
22 including alternate -- alternative 5, the no action alternative. How
23 can the U -- I just asked the rhetorical question -- how can the
24 United States Forest Service even consider this project after having
25 made this statement that an area already depleted, that the

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1 subsistence values in question and in danger, to go in and extract a
 2 significant amount of timber under uh -- their uh -- preferred
 3 alternative? I think it's unconscionable. And uh -- the fact that
 4 uh -- the Forest Service says in the same paragraph all -- quote, all
 5 action alternatives would increase this disparity, end quote. It
 6 seems to me that to what's needed here is not logging, is some type
 7 of remediation to help these deer populations uh -- increase. So
 8 again, no action is the only viable alternative.

9 Chapter 4, page 49, under uh -- Environmental Consequences,
 10 under salmon, the quote is uh -- the fisheries section of this
 11 chapter concludes that with the application of best management
 12 practices and the TTRA buffer strips, no quantifiable effects are
 13 expected on salmon and trout spawning and rearing habitat. Well,
 14 logging is proposed in this uh -- project on steep slopes and uh --
 15 very unstable soils. And this will undoubtedly cause landslides
 16 which -- with the result in damage to salmon habitat due to silting
 17 of uh -- spawning beds. So I think that's another inaccuracy.

18 Also uh -- based on the imple -- a quote from the document.
 19 Based on the implementation of site specific prescriptions developed
 20 during interdisciplinary meetings for projecting sal -- salmon
 21 spawning and rearing habitat, the EIS projects that the immediate and
 22 foreseeable effects on the abundance and distribution of salmon for
 23 subsistence uses in the project area would not be measurable. I
 24 think that's an inaccurate statement. I think the no action
 25 alternative is called for uh -- because of that also.

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1 And under Fishing -- uh Chapter 4, uh -- page 49, to quote from
 2 the document, the establishment of logging camps at Noxon Creek and
 3 Schulze Cove may increase fishing pressures at Nakwasina River and
 4 Fish Creek respectively during camp operations three to five years.
 5 Well uh -- resident loggers in these areas for three to five years
 6 will ensure the extinction of the sa -- the steelhead runs. I can
 7 guarantee you that. It's um -- it's just not reasonable.

8 In the uh -- all through the document it states that the uh --
 9 it makes statements such as uh -- under Chapter 4, Environmental
 10 Consequences, page 51, quote, the estimated number of deer available
 11 for harvest is sufficient to meet current subsistence and non-
 12 subsistence demands only in WAA 3313, but will not meet the projected
 13 increasing demand from subsis -- subsistence to sport hunters. I
 14 believe that that uh -- also shows that uh -- this project does not
 15 comply with ANILCA.

16 Also uh -- page 52, the same chapter, a quote from the document.
 17 Quote, current subsistence demand exceeds the estimated deer supply
 18 uh -- in WAA 3001, 3002, 3012 and 3014 -- uh WA 3313 shows that the
 19 increasing demand and slightly reduced deer habitat capabil --
 20 capability from the worst case alternative that both projected
 21 subsistence and non-subsistence demand will not be met in the year
 22 2008. So uh -- in the res -- the accompanying charts show that the
 23 uh -- that the deer population needed to support current average
 24 harvest to meet demand from a rural natural community -- uh non-rural
 25 communities uh -- the uh -- the total required is 9,360 and the

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1 habitat capability -- uh -- only produces 6,970. So there's a
2 discrepancy of 2,000 there. It uh -- it shows that logging in these
3 areas extracting that amount of timber would only heighten that
4 discrepancy.

5 Uh -- sig -- on Chapter 4, page 53, uh -- Table 4-37,
6 significant possibility of a significant restriction on subsistence
7 use of Sitka black-tailed deer. And under all of the alternatives,
8 abundance or distribution, the indication is yes, and yes indicates a
9 significant possibility of a substantial effect which is in violation
10 of ANILCA.

11 Again under Environmental Consequences, Chapter 4, page 57, a
12 quote from the document. Enough is known about foreseeable
13 activities on other land surrounding the project area to project that
14 subsistence use of deer may be sig -- significantly restricted in the
15 future. Subsistence use of salmon other fin fish, shell fish and
16 other resources in the project area is not expected to be
17 significantly restricted. I think the first statement -- the first
18 sentence is accurate. I think that it is going to be a uh -- a
19 significant restriction of subsistence deer hunting, and I think the
20 second sentence is inaccurate because one goes with the other. The
21 high levels of logging on steep slopes and unstable soil will
22 undoubtedly cause uh -- a restriction in uh -- subsistence salmon
23 extraction.

24 And then again on Chapter 4, page 60, a quote -- uh -- quote,
25 there is a significant possibility of a significant restriction of

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1 subsistence use of deer in the project area for Sitka residents regar
2 -- regards of which alternative is implemented, unquote. That tells
3 me only one thing, that uh -- if uh -- even under the no action
4 alternative, if uh -- subsistence use is going to be restricted, then
5 how can the Forest Service again, how can the Forest Service even
6 consider going into the Northw -- Northwest Baranof project area and
7 extract timber which uh -- without saying will further reduce that uh
8 -- subsistence capability?

9 And again uh -- my closing statement, section 810 of ANILCA,
10 agencies are required to evaluate the effects of proposed actions on
11 subsistence uses on federal land and to determine if the proposed
12 action may significantly restrict subsistence opportunities. Time
13 and time again througho -- throughout this document there are
14 admissions contained in this document that it will -- that the
15 proposed project will adversely affect subsistence opportunities. So
16 uh -- I think that uh -- the only reasonable alternative is the no
17 action alternative. Thank you.

18 BY MR. FOX:

19 Thank you. Our next person to give uh -- testimony will be
20 Steve Stringham.

21 BY MR. STRINGHAM:

22 My name is Steve Stringham. I'm an environmental consultant and
23 an adjunct professor at Sheldon Jackson. I do not represent Sheldon
24 Jackson, however, merely myself as President of Wildwatch Consulting.
25 I've been in the environmental uh -- assessment business for over

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1 thirty years and the comments that I have direct -- that I'll direct
 2 today are on the fundamental structure of the EIS being done more
 3 than on the specifics of which I'm not terribly familiar, being new
 4 to this community.

5 First off, let me say that I understand that the U.S. Forest
 6 Service people involved in producing this document have put a
 7 tremendous effort into it. I've spent a couple of hours here this
 8 evening talking to the personnel, listening to what they've been
 9 doing, and I know it takes a lot of time, it takes a lot of money and
 10 it takes a lot of hard work on their parts to achieve this. So I can
 11 only compliment them on the efforts that they have put in. However,
 12 when we go above and beyond the individuals involved and the efforts
 13 that we've made and we look at the basic structures of the documents,
 14 something that's a problem on a national level, not just on a state,
 15 much less a local level, we find that there is much to criticize in
 16 this environmental impact study.

17 First of all, there is very little data involved in this study.
 18 This has essentially no information on deer populations or bear
 19 populations or any other wildlife populations. When we talk about
 20 subsistence use, we need to know basically how many deer are out
 21 there and how the availability of those deer is going to be affected
 22 by this. There -- without information on deer and on reproductive
 23 rates and mortality rates of those deer, how these rates are affected
 24 by snowfall, by parasitism, disease, predation, et cetera, we really
 25 don't know what's out there.

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1 When we talk about this approach where we have simply a habitat
 2 capability index, we're talking about an abstract estimate of the
 3 capability of that land to support deer. We're talking about an
 4 estimate of carrying capacity. We're talking about the effects of
 5 logging on that carrying capacity. Now obviously if we look at that
 6 approach and we say that we're going to take out X many acres of
 7 habitat, we're going to reduce the overall carrying capacity and we
 8 say this is a small percentage; that is an important piece of
 9 information. But there's much that it doesn't tell us. It doesn't
 10 tell us how the population of deer is going to be related to that
 11 carrying capacity, how the logging efforts are going to change that.
 12 There is much that goes on in terms of the impacts of logging besides
 13 a change in the overall carrying capacity. This document as is
 14 typical of EISs, doesn't really address that. We need a population
 15 model for that and, furthermore, we need models that take into
 16 account many different species and how they function together as
 17 ecosystems.

18 As a population biologist, as an ecosystem analyst, as somebody
 19 that has been doing this for about three decades, I find almost none
 20 of the information in there, not even one percent of it in which I
 21 would need to make a rational decision about the impacts of logging.
 22 The gentlemen who just spoke is understandably concerned as other
 23 people here are concerned about what the opportunities for
 24 subsistence use are going to be in the future. And I'll say this
 25 that in lieu of the information of what the impacts are going to be,

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1 I would favor the no action alternative. But, the question is, what
 2 does it take to get that information. I would suggest this doesn't
 3 lay so much with the local people as it does on a national level with
 4 the whole EIS process. But in Alaska, because of ANILCA, because of
 5 some other laws that exist, we do have a chance to go beyond the
 6 limitations of NEPA, and I would hope that there would be the funding
 7 and the other opportunities necessary to go forward. Because we do,
 8 gentlemen and ladies, have a great deal of distance to make before we
 9 know what the impacts of this are going to be on a subsistence or any
 10 other use. It is to me very close to being a data free analysis. We
 11 have sugar free colas. We had fat free foods. And here we have a
 12 virtually a data free analysis when we come down to the actual
 13 biology of the animals and plants involved. We know almost nothing
 14 about what's going to happen. Thank you.

15 BY MR. FOX:

16 Thank you. Next person to give tes -- excuse me. Next person
 17 to give testimony is Larry Trani.

18 BY MR. TRANI:

19 I'll pass for right now.

20 BY MR. FOX:

21 Would you be interested in doing it later or

22 BY MR. TRANI:

23 Perhaps.

24 BY MR. FOX:

25 Okay. Okay. Our next person then would be Larry Edwards.

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1 BY MR. EDWARDS:

2 My name's Larry Edwards. I'm an 18 year resident of Sitka and I
 3 would like to say that the uh -- planning effort is short-sighted in
 4 the extreme so much so that the environmental analysis is completely
 5 useless. I'd like to give some examples of that. On page 1-12 of
 6 the draft EIS it says, quote, much of the project area continues to
 7 be managed in a near natural state with corresponding hunting,
 8 fishing and subsistence opportunities and experiences. The remainder
 9 of the area is managed for short-term activities such as timber
 10 harvest, end quote. And uh -- logging of the old growth, I refuse to
 11 call it harvest and I uh -- I'm really concerned that that word is
 12 being used in this uh -- impact statement. I feel it's absolutely
 13 inappropriate, but uh -- logging of old growth is not a short term
 14 activity. It's got to be viewed in the long term and actually in the
 15 extreme long term.

16 Another example is on page 4-1 of the impact statement. Quote,
 17 in this document we have identified a time period for the purpose of
 18 analyzing both indirect and cumulative impacts. This time period is
 19 between the date of the Record of Decision expected to be January of
 20 1996 and the year 2008, which is only 13 years from now. In other
 21 words, uh -- you've given yourselves a clean slate to start from uh
 22 - ignoring all your prior logging in the project area and I think
 23 that's absolutely inappropriate. Uh -- all the major valleys going
 24 north from town here have been creamed: Starrigavan, Katlian,
 25 Nakwasina, Saint John the Baptist, Fish Bay, Rodman Bay, Saook, over

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1 the other side of the channel in to False Island and up into
 2 Chichagof. Uh -- this needs to be considered cumulatively. Uh --
 3 looking at those past impacts which you're trying to wipe off the
 4 slate and also looking at those adjacent project areas which you guys
 5 don't like to do. In fact, the DEIS contains no analysis at all of
 6 the amounts, qualities and types of old growth habitat lost to past
 7 logging in and adjacent to the project area. The DEIS considers only
 8 so-called productive forest which represents a highly distorted view
 9 of the impacts of the project.

10 The term productive forest -- this is another one that doesn't
 11 belong in the impact statement at all -- is a highly misleading one.
 12 Lumping forest habitat types of widely varying quality into one mass
 13 for consideration and it's used in the DIS -- DEIS to mislead the
 14 public I believe intentionally. Analysis based on acres of
 15 productive forest conceals the greatly underestimated impacts and it
 16 promotes high grading at the stand level. This bogus analysis is
 17 resulted in promotion in Chapter 1 of the DEIS of what you call a
 18 desired future condition for the project area that I can only
 19 describe as cornucopian fantasy. The desired future condition
 20 reveals only outputs from the forest saying basically that it can
 21 supply all needs, but neglects to divulge what the plan's actual
 22 desired condition of the forest itself will be. In other words, how
 23 much of the old growth will actually be left, where and what
 24 quantities and what qualities. It's silent as to what percentage the
 25 original amounts will be left.

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1 The uh -- draft impact statement relies very heavily on habitat
 2 capability modeling to analyze impacts or supposedly analyze impacts.
 3 This is the primary foundation for wildlife and subsistence analysis
 4 in the impact statement and it's completely inappropriate uh -- to
 5 use modeling in this way. In the uh -- lawsuit brought by the
 6 Wildlife Society over the Kelp Bay project, the use of timber type
 7 maps for determining proportionality was determined by the court to
 8 be arbitrary and capricious. This is because the timber type maps
 9 are remarkable in their high level of inaccuracy as to where habitats
 10 of various qualities are located. The habitat capability models are
 11 based on these same maps and basic impact analysis on these models
 12 therefore, is also arbitrary and capricious. This is a major point
 13 considering the tremendous social and economic value of subsistence
 14 resources in the project area to the people of Sitka.

15 In addition, the habitat capability models are very crude. They
 16 do not take into account what is sometimes referred to as a
 17 juxtaposition of habitats. All acres in the model are uh -- given
 18 the same value for wildlife. While in fact, those isolated or
 19 fragmented by logging or uh -- natural effects such as muskeg, uh --
 20 may have little or no value uh -- to wildlife in comparison to stands
 21 with more favorable juxtaposition to other habitat types. Fish and
 22 Game has found in Peril Strait for example, that deer winter
 23 mortality is two times higher and fragmented than unfragmented
 24 habitat. And in that case, the fragmentation is due primarily to
 25 logging. Uh -- I raise the question over the habitat capability

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1 models because they provide uh -- low ball estimates of the impacts
 2 on deer and, therefore, on subsistence. I think uh -- most of the
 3 people here and certainly yourself are familiar with the uh -- report
 4 done by the Viable Populations Committee, and the peer review that
 5 was done of that later by a scientific committee of 18 international
 6 scientists. The peer review to the uh -- committee's report and the
 7 committee's response to the peer review are revealing of the problems
 8 with the degree of reliance that this DIS -- DEIS places on habitat
 9 capability models.

10 And I'd like to make a few quotes out of some of these
 11 documents. From page 5 of the peer review, it says, quote, none of
 12 the uh -- habitat capability models has any calculation of the
 13 probable error associated with them. The modeling approach needs to
 14 be rethought and a program of work to develop them into models that
 15 have Tongass specific data and confidence limits needs to be
 16 developed.

17 And -- let's see. From page 14, addressing habitat capability
 18 models in general it says, quote, we have a good deal of reservation
 19 about the habitat capability models. The greatest concern is about
 20 the false precision that the models imply. They may be precise, but
 21 the accuracy is unknown and we assume it to be very low. The models
 22 are deterministic and do not take into account any stochastic
 23 features of a relationship between habitat and population and they
 24 are parametrized (sic) with data whose error limits are unknown and
 25 very likely high. Thus, the confidence limits for the models were

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1 they to be calculated in some way would surely be so large as to
 2 render the models close to useless. Also, as the authors of models
 3 point out, the models could be quite sensitive to small changes in
 4 parameter values in ways that are not understood. These models have
 5 played a useful role in organizing current knowledge and emphasizing
 6 knowledge gaps, but is now time to build on this beginning and move
 7 to more realistic approaches whose confidence limits can be
 8 calculated, end quote.

9 And again on page 22, specific to the Sitka black-tailed deer
 10 model, it says, quote, the sampling and analysis techniques used to
 11 verify the model are problematic in that there is not enough
 12 methodological information available on which to evaluate the
 13 analyses. An additional concern addresses the issue of using a mean
 14 value for snowfall throughout the Tongass when there is considerable
 15 variation from northern to southern regions of the forest. The model
 16 needs to incorporate these issues in order to provide a realistic
 17 assessment of the habitat. The HCA model for maintaining viable
 18 populations of Sitka black-tailed deer on the Tongass National Forest
 19 is probably not suited for the long term. McCollock expresses
 20 concerns and problems of oscillating factors may create extremes in
 21 population that would make the deer especially vulnerable to the
 22 pressures of hunting and wolf predation. This combination of factors
 23 could place the viability of the species in question. And, of
 24 course, the major underlying factor in that in our local area is not
 25 just the hunting pressure uh -- which has existed here for long, long

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1 time, but the impact that's happened from taking out all these valley
2 bottoms in the past logging and what this new project will do on top
3 of that.

4 This response uh -- to the peer review the interagency viability
5 committee said this in May of 1994, quote, the habitat capability
6 models have a role to play in making relative comparisons of the
7 likely effects of different management alternatives on wildlife.

8 They're relatively simple deterministic models. We do not support
9 using the -- using them for analysis of viability. We fully concur
10 with the recommendation -- this is of the peer review now -- uh --

11 that uh -- explicit viability population assessments are superior for
12 evaluating viability concerns. And here I'm concerned not just with
13 the viability of the deer populations here, but with the huntability
14 of them because the huntability gets to the root of what we need in
15 order to sustain our subsistence uses. And uh -- I would just like
16 to make a reference here to, that in the Tongass Timber Reform Act,
17 Section 101, a sustained yield of all uh -- renewable resources is
18 supposed to be assured. And I don't feel that this plan does this in
19 large part because it relies to the degree it does on these habitat
20 capability models and it relies on this false precision putting
21 numbers in the tables and uh -- in the EIS that uh -- seem to
22 indicate that there's no problem, but I think these are real low ball
23 estimates of the impacts and I think this is gonna cause a lot of
24 problems here later.

25 Uh -- in it's uh -- response to the peer review, the viability

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1 committee made immediate recommendations. Uh -- in its response to
2 the peer review recommendation of do not differentially cut low
3 altitude high volume old growth, the committee said this, quote, we
4 agree with this recommendation. These habitats have sustained the
5 heaviest timber harvest on the Tongass National Forest over the past
6 50 years -- speaking to the high volume now. It is important that
7 the amount, location and habitat value of these stands are documented
8 before additional losses are incurred. In order to satisfy this
9 recommendation, it is necessary to defer logging and road building in
10 volume classes 6 and 7 old growth forest as determined by field
11 recognition below 800 feet elevation under a bio -- until a
12 biological survey is completed. And this is the important part I
13 think for this project. It says, care should also be taken not to
14 high grade existing stands of volume class 5 old growth forest.

15 Volume class 5 acres scheduled for harvest in any sale should not
16 exceed the number of acres scheduled in old growth volume class 4.

17 And uh -- from my analysis and this is not from figures actually in
18 the EIS, but ones I had to develop from data that's in there and
19 other places, it appears to me that uh -- the timber that's coming
20 out of the sale is predominantly uh -- the higher end of the volume
21 class 5. So that -- there's a real problem here and uh -- I think
22 this whole EIS should be thrown out. I urge that uh -- alternative 5
23 the no action alternative be adopted. I'm certainly open to logging
24 the project area, but I feel it should be very small scale in view of
25 the past logging and uh -- it should be geared towards uh -- small

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1 local enterprises that uh -- make a high use of value added so we're
2 getting lots of jobs out of a small amount of timber. I think all
3 action alternatives would impact subsistence excessively and uh --
4 none should be accepted. Thank you.

5 BY MR. FOX:

6 Thank you. Our next person to give testimony will be Claire

7 Johnson.

8 BY MS. JOHNSON:

9 My name's Claire Johnson. I am supporting only the no cut
10 alternative as listed in this document. I do support selective
11 cutting by small timber woods people. I have a lot of difficulty
12 believing what I read printed in your book. Chapter 4, page 34,
13 under Fish it reads no threatened or endangered fe -- fish species
14 are known to occur in the Northwest Baranof project. Therefore, no
15 affects are expected.

16 In my mind, all species are equally important, and they must be
17 valued as such. And you p -- people must learn to look at them as
18 such. When I read that there were no caves found, I don't believe
19 it. It think there's sink holes around that we don't even know
20 about. And I know that you can really screw up the hydrology with
21 logging in some areas when you don't know what you're doin'.

22 I don't trust your process of public hearings. For one time I
23 would really like to see that you would listen to what the majority
24 of public comment says and act on that. This rainforest is the last
25 of it's kind on the continent and I think it needs to be tended with

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1 great care from now on. And I think that if you would leave your
2 hands off of subsistence areas for Sitka and watch what happens to it
3 over the next 50 years without cuttin' it, or at least with people
4 selectively cut, that you would be happy you did so. Thank you.

5 BY MR. FOX:

6 Thank you. Robert Reid.

7 BY MR. REID:

8 All right, thanks. I haven't -- I haven't really prepared much.
9 I'm still finding out more about this all the time. Um -- I liked
10 what the gentleman said earlier about all the work done by the Forest
11 Service personnel and I believe, you know, people are, you know,
12 there's individuals that are doin' a good job. Um -- but I'm not
13 sure that -- that all the studies have been done that need to be
14 done. Um -- this is talking about subsistence and I've used and I
15 still hunt in areas like Neva Strait, Saint John the Baptist,
16 Nakwasina Passage and I als -- I'm -- so those would directly be
17 affected by, as far as deer populations -- uh it talks somewhere
18 about displacement and deer returning in a few years, but, you know,
19 I think their habitat's what -- what sustains them.

20 And I guess at this time I should probably mention that I have a
21 big question about uh -- this process and these studies um -- due to
22 information put out by the Forest Service uh -- for example, there
23 was a meeting with the Forest Service and the City officials here in
24 which there were I think 5 scientists speaking on uh -- things such
25 as clear cutting or not clear -- they didn't call it clear cutting

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1 because there were so many trees per acre, but very few like 6 I
 2 think. Um -- Steve Brink made a comment, and this is classic, you
 3 know, this is -- it's hard to believe that it could have even been
 4 said, but he said that uh -- and I'm sure it's been recorded so it's
 5 -- it's there, but he said that deer populations are not habitat
 6 dependent which, you know, I find it very difficult to trust anybody
 7 who would say something like that whose -- you know, it's frightening
 8 actually, you know. That would be like, you know, saying there's no
 9 threat of anybody -- nuclear war just because it's not gonna happen,
 10 you know. Um -- that was a ridiculous statement. I can't believe
 11 that we're, you know, if pe -- it's insulting to think that we get
 12 that sort of information from the Forest Service and um -- you know,
 13 that puts into question the whole study for me.

14 Um -- I use this area heavily. I know lots of people in Sitka.
 15 I can't believe there's not more people here, but lots of people use
 16 these areas heavily for deer harvest. And when you say that fish
 17 populations won't be affected and shellfish won't be affected, I'm --
 18 I don't know -- I -- I didn't see studies in there and I haven't read
 19 the whole document so I don't know, but I'm curious what sort of
 20 studies have been done to indicate that, and I find it very difficult
 21 to believe.

22 Um -- I'm also -- I wrote down something here, you know. Is
 23 subsistence more than harvest of a species for consumption? And I
 24 had the thought that I guess by law, you know, the Forest Service is
 25 not supposed to -- to destroy the -- the subsistence -- um -- of

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1 people -- you know, regarding say deer meat and fish meat and tree
 2 bark and these things, but at some point when the forest maybe these
 3 products will still be out there, but at some point the forest will
 4 be devalued to a point where it's not going to be, you know, the same
 5 experience. Now that's -- that's something a lot of people would
 6 kind of laugh at and say, oh that's ridiculous. You just want the
 7 meat, you know. But for me hunting is -- is not, you know, I get
 8 almost all of my meat from hunting and fishing. I -- I buy very
 9 little, you know. And it's -- for me it's a lot more than just meat
 10 on the table, you know. It's something I enjoy. It's something that
 11 -- that makes my life, you know, I think just wonderful. And uh --
 12 the ability to do that is -- is really something -- um -- and I hate
 13 to see that destroyed or -- or changed in a large negative fashion.

14 Um -- I do support logging and would like to see, you know, a
 15 more balanced approach to logging and smaller uh -- smaller logging
 16 areas. I don't like to see these areas um -- that are just being
 17 cleaned out. And if you look at the maps, you know, it's just the
 18 best stuff that's going. It's, you know, and I don't blame ya. If I
 19 was gonna -- if I was in the business of harvesting timber you might
 20 as well go for the best. But I'm seeing it going away, you know.
 21 And these are also the prime areas for deer habitat, fish. Um -- but
 22 I -- I'd like to see the Forest Service more directed towards um -- a
 23 style of logging that was going to enhance the community, you know,
 24 through local business and through local participation because as it
 25 is now, we have these big sales going out and people, you know,

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1 there's -- the companies are generally from out of state or just -- I
 2 don't know where from. I personally don't know very many people at
 3 all, if any, that are directly involved in harvesting timber or um --
 4 you know, there's -- for the volume that's being done. Now I
 5 personally am part owner of a sawmill and we get some logs that
 6 people get personal use or whatever um -- but, you know, it's -- I'd
 7 like to see the Forest Service more geared to smaller operations
 8 which would benefit the community and add to the community here. So
 9 -- um -- that's kind of aside of subsistence, but I just want to make
 10 it clear that I'm not against logging, that -- but I think that these
 11 large scale cuts are gonna -- they're just gonna be too detrimental
 12 to subsistence and there's just so many people in Sitka that are --
 13 that are hunters and fisherman that um -- I don't think we can
 14 tolerate to have it taken away from us, you know.

15 One more thing -- the taxpayers -- I feel we as taxpayers are
 16 paying to have our national forest destroyed and we're not receiving
 17 any benefit locally. I know that people -- there's taxpayers that
 18 are paying to have the forest destroyed here that are down south
 19 working at timber mills and that, that are benefitting financially
 20 from it, but I don't believe many people. You know, I don't know.

21 Do you -- may be you could answer a question? Are you going to take
 22 testimony across the country or is that just in this area?

23 BY MR. FOX:
 24 Just in this area.

25 BY MR. REID:

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1 Okay. That's about all I have to say. Thanks for your --
 2 listening.

3 BY MR. FOX:
 4 Mr. Trani?
 5 BY MR. TRANI:
 6 I'm still writing.

7 BY MR. FOX:
 8 Okay.

9 BY MR. TRANI:
 10 If there's nobody else though

11 BY MR. FOX:
 12 Well, it's 7:45. Let's take a 10 minute break. The record will
 13 be open until 9 o'clock. So, if anyone else wishes to give
 14 testimony, if you'd please sign-up and we'll resume the hearing again
 15 in 10 minutes. That'd be 7:55.
 16 (Wherein a short recess was taken.)

17 BY MR. FOX:
 18 We're ready to resume the hearing. Just a reminder, please hold
 19 your comments to 10 minutes or less. If you wish to give written
 20 testimony instead of oral, just -- it all carries the same weight. It
 21 will all be considered and there are forms in the back in order for
 22 you to write comments on. There's also comments -- forms for
 23 comments for uh -- general comments on the document except for
 24 subsistence.

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1 BY MR. TRANI:

2 My name's Larry Trani. I'm a 26 year resident of Sitka. Uh --
3 I'd like to start off first of all by apologizing for not being ready
4 first go around because I saw all these folks and I thought gosh
5 they're all going to get up there and I'll have plenty of time to
6 scratch my thoughts down. So -- any how.

7 Um -- I'd like to start off by saying um -- that I would support
8 alternative 5, no action alternative um -- based on this very simple
9 thing. All the drainages of the Northwest Baranof Timber Sale that
10 uh -- those areas are Rodman Bay, Fish Bay, Saint John the Baptist
11 Bay, Noxon Creek, Nakwasina River and Lisa Creek have already all
12 been high graded thereby destroying critical subsistence habitat and
13 with the reduction of habitat comes the reduction of subsistence
14 species. And based on this very basic truth, I can only support
15 alternative 5. If there were, however, an alternative 6, an
16 alternative that provided no clear cutting or any similar logging
17 method in the project area, but rather a -- a cut of select cutting
18 only with helicopter lift out, I could support that alternative. But
19 since there is no uh -- alternative 6, I can therefore only once
20 again state that I support only alternative 5, the no clear cutting
21 alternative. Thank you.

22 BY MR. FOX:

23 Thank you. It appears that at present uh -- we don't have
24 anyone signed up to give further testimony. Um -- the r -- as I said
25 earlier -- ah, here comes someone.

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1 BY MS. LANGE:

2 My name is Anita Lange. I'm not um -- familiar with all the
3 technicalities of this EIS, but as a citizen of this place and one
4 who values subsistence for my life I look to the reason for this
5 hearing and I found it on the first page of the summary. And when I
6 see that the reason we're here for this hearing is the possibility of
7 significant restriction on subsistence use of deer. That's why
8 you've called us together here. Well, that got me real curious so I
9 looked on in to the consequences in Chapter 4 and the first thing I
10 see is that all the wildlife analysis areas are listed as showing um
11 -- the demand will not be met. The demand exceeds the supply of deer
12 in all of these areas. We're talking about nearly 2,000 acres. And
13 the entire area here is unhealthy, under threat now, currently. And
14 we're talking about decreasing the health of this place and taking
15 away what is already not stable for demand -- the subsistence demand
16 of people who use this place. I see that makes no sense at all.
17 When a place is not stable for demand and supply it's uh -- the most
18 reasonable thing to do is allow stability in that place.

19 I notice also on the Table 437 that all of the 4 alternatives
20 that you've proposed do nothing for that situation. All of them do
21 admit yes, they increase um -- the threat to the deer populations,
22 every one of these alternatives. And so I have to say, common sense
23 would say no action alternative is the only way to protect this place
24 on which we depend for our subsistence. Thank you.

25 BY MR. FOX:

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1 Thank you. Excuse me, did you sign in back in the back?

2 BY MS. LANGE:

3 Yeah.

4 BY MR. FOX:

5 Okay. I just want to make sure so that we have your name and
6 address if we had any questions.

7 BY MS. LANGE:

8 Thank you.

9 BY MR. FOX:

10 Okay, thank you.

11 BY MS. PRITCHARD:

12 My name is Cheryl Pritchard and I just want to reiterate and
13 reemphasize what Claire had said on page 34 about there being no
14 effects on the um -- salmon that they anticipated and I find it
15 ironic uh -- being as how we're shut down for endangered species
16 because of habitat destruction in the lower 48 and while our state's
17 fighting for us to continue fishing up here that uh -- were going at
18 the same destruction of the same habitat for the fish. I don't get
19 it. Thank you.

20 BY MR. FOX:

21 Anyone else? Yes.

22 BY MR. STRINGHAM:

23 (Indiscernible -- not near microphone) my earlier

24 statement.

1 BY MR. FOX:

2 Uh -- yes.

3 BY MR. STRINGHAM:

4 This is Steve Stringham amplifying or continuing where I left
5 off before. There've been a lot of good comments made here and I'd
6 like to address two in particular. First of all, are these habitat
7 capability models. Again, these are models that estimate the
8 carrying capacity of the habitat and how much we decrease. The
9 comments that were made about it's not just a matter of how much
10 habitat we have overall, but how this is related to the areas that
11 are being logged, to the roads, are very critical. We have different
12 kinds of habitat being it conifer habitat, being it soft wood
13 habitat, being it wetlands, et cetera. Their use by different kinds
14 of wildlife species depends very critically on how they're related to
15 one another spatially. To interrupt a migration corridor, a travel
16 corridor, with a road may seem to take away just a tiny piece of
17 habitat yet have a tremendous impact on a population. Fragmentation
18 of population areas that is habitat, often use very little habitat in
19 the process. It'd have an enormous effect far greater than would
20 ever come out of any modeling of carrying capacity of this sort. We
21 don't have any real information in this analysis about what types of
22 models are being used. We have a name, but we don't have the
23 substance of the models. We don't have information on how the models
24 were verified.

25 I'm basically a professional modeler. That's a great deal of my

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16A, 16C, 26F

1 professional activity for more than two decades. I put very little
 2 faith on any model that is used to predict real world events when we
 3 don't have real world data either going in to the model or coming out
 4 of the model. We have some information on habitat based on remote
 5 sensing and a small amount of ground truth. We don't have any
 6 information here on how reliable even the habitat typing is. From
 7 word that I've gotten informally from the Forest Service, it's not
 8 thought to be very reliable. So if the basic habitat data that we're
 9 working from is poor, then how valuable is it working in the models
 10 and what's happening with carrying capacity? I will submit that
 11 until we actually have data on predicting impacts to hearing --
 12 carrying capacity and actual observations of populations that have
 13 been impacted, and we see how accurate the models are, we really
 14 don't know if these models have any use at all. Generally, in
 15 scientific purposes a model like that is used only for conceptual
 16 purposes only. It is not used to predict real world situations
 17 because it's considered to be basically useless if not worse than
 18 useless. And I'm afraid that's what we're dealing with here.

19 I have looked at the cumulative effects models. I've looked at
 20 habitat suitability index models. I have looked at capability models
 21 of various kinds that have been produced for bears and other animals.
 22 In general, these are very unreliable. They're generally unproven.
 23 They are more educated guesswork and when somebody says this is the
 24 best mechanism we have available, I say perhaps as a first step; but
 25 when are we going to take the second step and the third step? I've

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1 done studies on grizzly bears and black bears for years and a lot of
 2 my work has been looking at specific things and habitats and looking
 3 at how these are related to population parameters, reproductive rate,
 4 survival rate, growth rate of individuals, many other things that are
 5 going on here, and the idea that we could use something like this
 6 habitat capability index model to predict these things in populations
 7 is ludicrous. It just doesn't work. So we need something far better
 8 than what we have here in these models I think are not telling us
 9 anything useful about the impacts.

10 The second thing I will point out is there were statements made
 11 in the EIS that erosion is probably not going to cause a great deal
 12 of impact on fish if the logging is done in the approved manner
 13 unless we have landslides. We look at one of the tables in there
 14 whose number that I forget and it indicates that -- I think it is
 15 something like half of the total acreage to be logged is in areas of
 16 high to extreme risk of slumping -- mass movement of the ground. So
 17 as a cursory look at -- we're saying on the one hand, probably not
 18 going to have much impact unless we have landslides, the other saying
 19 geez, it looks like we're going to have a lot of landslides. So
 20 basically we are saying that geez we don't know what the impact is
 21 going to be if we have landslides, but we're going to have them. So
 22 once again, the EIS has failed to provide the basic information that
 23 we need to make informed rational decisions on whether the benefits
 24 of this logging to this community are going to outweigh the
 25 detriments. So far it looks like they will not outweigh the

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1 detriments. Thank you.

2 BY MR. FOX:

3 Thank you.

4 BY MR. TRANI:

5 Why don't you just get up and take that microphone around and
6 talk to the people?

7 BY MR. FOX:

8 Well, I

9 BY MR. TRANI:

10 If that's possible.

11 BY MR. FOX:

12 without sounding too bureaucratic, we want to stay within
13 the format of the -- of the hearings that we have established -- so --
14 - however, anyone's feel free to speak or, like I said earlier, uh --
15 if you don't feel comfortable uh -- getting up and speaking, we'll
16 certainly take written comments.

17 BY MS. PRITCHARD:

18 Is it okay to open up my forum again?

19 BY MR. FOX:

20 Okay.

21 BY MS. PRITCHARD:

22 My name's Cheryl Pritchard and -- um -- there's two points that
23 I saw on the Olympic Peninsula after it had been clear-cut -- a
24 reference to what this gentleman over here had said. I had flown

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1 over when it hadn't been raining and you could see out on the ocean a
2 plume of silt that had been washed down. Well, if your buffer zones
3 on class 1 and 2 streams are there, there's no guarantee that being
4 such a thin area if the whole forest beside 'em is clear-cut that
5 one's not going to come and crash 'em right down in the creek.

6 That's number one. And number two, the -- the class 3 streams that
7 are not protected they -- they will silt and wash down into the class
8 1 and 2 so they will be affected and silt does affect the spawning
9 ground of salmon as was evidenced with the silt running down without
10 rain from the top of the Olympic Mountains into Puget Sound. That
11 was one.

12 And the other one it was -- it's pointed out to me here Chapter
13 3, page 22, about the Nakwasina River uh -- no mortalities or disease
14 was attributed to the spray. I had a friend who was working for Fish
15 and Game and in Sequi he was taking samples of fish. And they were
16 doing clear cutting above Sequi. And the samples of fish that he was
17 taking there he kept coming up with fish that were diseased and had
18 tumors. He sent these s -- specimens into the Fish and Game and they
19 put 'em in the freezer and cataloged 'em -- I don't know how. Maybe
20 in a round basket or whatever and nothing was ever said or done about
21 these fish that he kept coming up in his sampling. Years later he
22 was up in the woods above Sequi when he came across 50 gallon drums
23 that had been left from spraying the red alder to keep 'em down. I
24 think it was Roundup -- maybe 24D -- I'm not sure. But to him that
25 was the answer to his question why these fish at Sequi right

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1 underneath that watershed were coming up diseased and with tumors.
 2 But although he had said something about it, nothing had ever been
 3 done and it had been ignored. I just want to emphasize that the
 4 problems that we're being faced with up here because of the habitat
 5 destruction in the lower 48 should not be ignored or pushed aside
 6 with what we're doing here. Thank you.

7 BY MR. FOX:

8 Our next person to give testimony is Herman Kitka.

9 BY MR. KITKA:

10 My name is Herman Kitka and I represent subsistence users and
 11 our group is in favor of alternative 5 for the simple reason the old
 12 growth is the one that's sheltering the deer population. When they
 13 clear-cut Hoonah Sound area, the deer population exploded because
 14 they produced a lot of feed for the deer, but leaving the old growth
 15 protected them during the winter. When it snows, rains, sleet and
 16 freezing is what gets the deer in. No matter how -- what shape the
 17 deer in, even if it had lot of fat, if the fur is freezing, they're
 18 goners. The same as humans. The temperature goes down and they go
 19 to sleep and never wake up. For this reason we oppose taking the
 20 rest of the old growth that are left. If that happens, our
 21 subsistence lifestyle is going to be interrupted. That's going to be
 22 quite a loss because those -- those -- those weathers I'm talking
 23 about occurs through the winters in Southeast Alaska.

24 Years ago my family used to trap up in Hoonah Sound. We had a
 25 cabin and a lean-to built over our wood supply. We leave that place

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1 sometimes two, three days for other areas that we had traps in. When
 2 we come back if -- if it's snowing and raining, we find deer sitting
 3 under the shelter. Maybe the Forest Service should put shelters up
 4 for those deers so they can be protected during those storms. This
 5 is something that I brought forth among our group and all of them
 6 agree that we should preserve our subsistence food. Without it, I
 7 think with today's prices lot of families gonna have a hard time.

8 I will have a written more clearly explaining our stand and I'll
 9 gonna submit it before October 2nd.

10 BY MR. FOX:

11 Thank you. Larry?

12 (Larry Edwards deferred to William Mark Wilson.)

13 BY MR. WILSON:

14 My name is William Mark Wilson. I'm in favor of alternative 5.
 15 I'm a Sitkan resident and I'm Alaskan citizen. Um -- subsistence to
 16 me is mostly for sport. I represent an interest group that is
 17 further removed from the impacts on subsistence. But reviewing the
 18 provided data I can make an educated uh -- judgment. Educated --
 19 I've got over 6 years of undergraduate or above studies from 5
 20 different institutions in the U.S. and Ecuador and over 20 hours of
 21 ecology, um -- so I can make an educated and logically sound judgment
 22 that my friends, family and neighbors can lose more than they can
 23 gain. And uh -- what can be gained from choosing alternative 5 is it
 24 can be gained from the time -- extra time is more value. More value
 25 because of more data collection, or more value because of more time

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1 for the value of the nature resource to increase. Thank you.

2 BY MR. FOX:

3 Thank you. Larry?

4 BY MR. EDWARDS:

5 Larry Edwards up for a second time here. I just wanted to add
6 one thing. Uh -- I've been asking questions of the Fish and Game
7 Subsistence Division about this project plan and uh -- according to
8 their analysis, alternative 1, the preferred alternative, would take
9 61 percent of its volume from areas that are high or very high
10 subsistence use areas for the people of Sitka. And I feel that
11 proposing to do this is unconscionable. I just can not understand
12 why our government is proposing to do this to us. I am interested
13 before I do my written comments in finding out what the percentages
14 are in terms of acres, in terms of number of units, but I believe
15 they'll probably be of the same order of magnitude and I find it
16 absolutely shocking. Thank you.

17 BY MR. FOX:

18 Thank you. Do we have anyone to add new testimony or -- uh --
19 add to testimony already given? The record will remain open until 9
20 o'clock and that's another 40 minutes. So, if anyone -- yes.

21 BY MR. SEVER:

22 For the record, my name is Florian Sever and I would like to
23 expand upon uh -- my prior comments, in particular the ones -- uh --
24 the comments that I made about the poor soil stability in the project
25 area and I'd like to refer to Table 3-2 -- uh -- under Chapter 3,

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1 page 9. And uh -- this is a table that shows the total area of each
2 uh -- mass movement class by VCU and in acres. And uh -- I've
3 actually done a little uh -- math here, and I've come up with uh --
4 the total acres in the whole project area is 155,116 acres. And uh --
5 -- 67,478 of those acres are high to extreme. Uh -- they're in that
6 high to extreme mass movement class out of a total of that 155,116
7 acres in the -- in the whole project area. And what this equates to
8 is a little less than one-half of the whole total acreage in the
9 whole project area is prone to uh -- at least a high likelihood of
10 landslides. And when you couple that with the additional -- I'm
11 taking for granted that the proposed -- uh -- cutting units or the
12 areas that are going to be logged are not going to be in the high --
13 the areas high or in extreme danger of landslides. So when you --
14 when you total that all up it's uh -- in the future -- I mean it
15 proposes the picture that uh -- is pretty frightening. That most of
16 the area in this project area is eventually going to be uh --
17 landslide.

18 And -- and for this uh -- I guess the statements uh -- that I
19 really take uh -- exception with in regard to uh -- salmon habitat.
20 The A -- EIS says that salmon habitat is not going to be affected by
21 any of uh -- the logging and uh -- personally I can't see how it can
22 not be affected. And uh to -- to expand that even further -- when
23 ever you -- when you take into account the areas that are in uh --
24 moderate danger of landslide out of the whole VCU, that segment of
25 the uh -- not VCU, but the project area -- if you take in that amount

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1 of area in that range from moderate to extreme, you come out with an
2 acreage of 116,303 acres out of 155,000 that are at least moderately
3 prone to landslides. I say that this -- uh -- that this area should
4 not be logged and that no action should be taken. Thank you.

5 BY MR. FOX:

6 Thank you. While we've got a break in testimony I would like to
7 remind everyone that there will be another hearing held Wednesday,
8 September 27th in the Maksoutoff Room at the Centennial Building.

9 There will be an open house prior to the hearing and uh -- the same
10 information will be made available and there will be opportunity to
11 give testimony at the hearing from 7 to 9 as well as tonight.

12 UNIDENTIFIED MALE:

13 What date?

14 BY MR. FOX:

15 It's on the 27th.

16 BY MS. HARTMANN:

17 And just another clarification, at the back of the room by Doug,
18 there's two -- two comment forms. Um -- one specific to subsistence
19 testimony and one specific for general comments. So feel -- you can
20 choose between the two methods. You can choose to just put in
21 subsistence testimony which will appear in the final EIS as you have
22 written it, or you can put a general comment about anything important
23 to the Northwest Baranof Timber Sale or you could do both. Um -- the
24 general comments um -- are um -- would also be incorporated into the
25 Final Environmental Impact Statement, not as you have written it.

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1 The subsistence testimony goes in the impact statement as you --
2 exactly as you have said it or as you have written it on the
3 subsistence testimony form. The comment forms are um -- lumped a
4 different kind of way and responded to under general categories
5 similar to the issues are in the scoping phase of the EIS. So, not
6 to confuse you, but there are two forms. One specific for
7 subsistence testimony and one for the general comments on the EIS.

8 All need to be at our office by um -- October 2nd.

9 BY MR. TRANI:

10 I've got a question. I saw Jim Thomas around here somewhere --
11 is he still here? Jim, could you give us an update on what the
12 status is as concerning the October 3rd election (indiscernible)
13 how that will be considered by the Forest Service -- whatever the
14 results are?

15 (Indiscernible comments made away from microphone.)

16 BY MR. THOMAS:

17 During the scoping period in 1993 the comments have continued to
18 be accepted from anybody that had interest throughout the planning
19 process and -- um -- will be accepted after the closing of the
20 comment period. We're always interested in what people think about
21 what we're doing and if they have some specific input, feel free to
22 give us a call.

23 The comments that you submit during the public comments period
24 that closes on October 2nd are those that will be uh -- dealt with
25 specifically in the Final Environmental Impact Statement. As Cindy

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1 pointed out, we uh -- normally comment and respond directly to all
 2 the comments we receive. Um -- the election -- the municipal
 3 election that will occur following the close of the comment period is
 4 also of interest to the decision makers and will be uh -- considered
 5 by the decision makers when they make their dec -- decision on this
 6 project in either uh -- late November or early December. The uh --
 7 fact that the election occurs after the comment period is -- is not a
 8 factor. If you came in on October 15th and talked to Gary Morrison
 9 or Jim Franzel and expressed your opinions on what you thought should
 10 be done with this project area, they would listen to that information
 11 too. However, comments that are received after October 2nd um --
 12 will not specifically be dealt with in the Final Environmental Impact
 13 Statement. Uh -- we will -- we are planning right now on um --
 14 addressing the uh -- issue of clear cutting that has been raised by
 15 the ballot issue in the Final Environmental Impact Statement. We
 16 will discuss that. Yes?

17 UNIDENTIFIED FEMALE:

18 Can you say how much you consider that? I mean do you think
 19 that the Forest Service would take that verbatim and say ok we'll go
 20 with alternative 5. You can't say right now?

21 BY MR. THOMAS:

22 Um -- the decision maker has a number of criteria that they will
 23 have to look at when they make their decision. That is Gary Morrison
 24 in conjunction with Jim Franzel, Sitka Ranger District, District
 25 Ranger. And they will um -- I'm sure they will um -- look at the

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1 results of the election and take that into consideration along with
 2 all the other public comments that are received during the comment
 3 period, testimony, subsistence hearings

4 UNIDENTIFIED FEMALE:

5 So those two will be the people that are making the decision?

6 MR. THOMAS:

7 Gary Morrison is the responsible official for this project.

8 MR. POST:

9 Will Gary Morrison and Jim Franzel have to justify their
 10 decision in writing?

11 MR. THOMAS:

12 The Record of Decision is the document they use to document the
 13 decision and the rationale that they used for making the selection.

14 It's a generally a fairly thick document with appendices and
 15 everything else. So there is written documentation of their
 16 decision.

17 UNIDENTIFIED MALE:

18 Is it available to the public?

19 MR. THOMAS:

20 It will come out with the Final Environmental Impact Statement
 21 in January. It will be uh -- the Final Environmental Impact
 22 Statement, any appendices, new maps, summary and the Record of
 23 Decision will all be available we hope about mid-January.

24 MR. TRANI:

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1 I've got a question that perhaps you can answer. At the
2 September 27th -- I think it's September 27th -- the next hearing --
3 if there were more people than could testify in that two hour block -
4 - period of time what would you do?
5 BY MR. FOX:
6 We would -- if people were still ready to give testimony when 9
7 o'clock came, we could extend it. Uh -- at this point I couldn't say
8 how long. It depends on several things, but
9 BY MR. TRANI:
10 Okay. What would it take if a group of people in town
11 understood that there were going to be a lot of people to testify.
12 Could you move that period of time up to 5 o'clock, 6 o'clock and
13 start your two hour period of time then?
14 BY MR. FOX:
15 I -- I would leave that up to the team, but I would say no,
16 because we have to have time for the open house for those people who
17 haven't had the opportunity to review the documents, the maps, the
18 information
19 BY MR. TRANI:
20 Could you move the open house up to 1 o'clock?
21 BY MR. FOX:
22 Then most -- then a lot of people couldn't attend it then. We
23 try to hold it after work so that people do have the opportunity to
24 attend the open house.
25 BY MR. FRANZEL:

1 I think Larry once the meeting times are established we really
2 can't change it because it's published in the Federal Register and
3 all of that
4 BY MR. TRANI:
5 So the best you could do is extend the hours?
6 BY MR. FOX:
7 Right.
8 BY MR. FRANZEL:
9 We could also limit comments to 5 minutes per person and we've
10 done that on occasion.
11 BY MR. FOX:
12 It would depend on how many that we would have. For example,
13 tonight most of the comments have not gone a full 10 minutes. So --
14 I BY MR. TRANI:
15 Thank you.
16 BY MR. FOX:
17 For the most part I think we -- unless -- well -- at 10 minutes
18 a person -- for two hours -- you know -- it's not going to leave many
19 to give testimony. But the average is probably going to be much less
20 than 5. So -- yes?
21 BY MR. REID:
22 I'll testify. I'm really amazed that there's not more people
23 here saying something.
24 BY MR. FOX:

1 Excuse me. Would you identify yourself?

2 BY MR. REID:

3 Oh, I'm sorry. My name's Robert Reid. Um -- I earlier I forgot
4 to -- I forgot to speak and say that alternative 5 would be the only
5 one that I support. Um -- there's probably other alternatives, but
6 they're not presented. So I -- I may just end up going on and on
7 about this. Um -- I'm sure that you've done some studies or at least
8 Fish and Game has, and knows that -- that these areas that are gonna
9 be logged or you have plans to log um -- are heavily used by
10 subsistent hunters and fishers. I'm sure that you're aware of that.
11 Um -- and I think that uh -- I just can't believe there's not more
12 people here. Nobody has anything to say right now.

13 Um -- it's -- it's uh -- kind of the heart of this area really --
14 -- I mean people -- most people I know anyway who live here enjoy the
15 outdoors and that's why they live here. And most of 'em hunt and
16 fish. Um -- everybody here in some way gets some food through
17 subsistence. Everyone who lives in Sitka. I don't -- I haven't yet
18 met anyone who hasn't. I guess I'm afraid that if these -- these
19 harvests continue and the numbers of -- of subsistentable -- uh --
20 resources out there are diminished that that's something that we're
21 all gonna lose. Um -- the roads are going to impact the populations.
22 They're going to impact access. They're going -- and the uh -- the
23 logging is going to strongly affect access as far as getting through
24 the woods. I, myself, really haven't been through a clear-cut. I've
25 been through areas that have been clear-cut close to 200 years ago,

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1 but I haven't really tried to get through one that's been done any
2 time recently. To me it just doesn't seem like it would be very
3 feasible to even try. I'm not sure how many other people have gone
4 through. I'm sure that people with the Forest Service probably have
5 to do studies on that. Um -- I -- I have to question the studies.
6 Um -- just the science. I realize, you know, science is an ongoing
7 thing and -- and -- you're going to know more next year than you know
8 now. I mean, we all know that.

9 It -- You have more time um -- but, you know, for example, um --
10 say regeneration of the forest. You have old growth forest, cut down
11 the trees and -- uh, you know, first I think there was estimates that
12 -- that those trees -- those could be re-harvested for second growth,
13 could be re-harvested say 50 years, then it's gone to 80 years and,
14 you know, now it's up to, I think the last I've heard from the Forest
15 Service was maybe a 125 years for -- for uh -- and that's -- maybe
16 that's a specific area. You know, because every area is going to
17 grow a little bit differently. The soil is very thin here and -- um
18 -- You know, we're not going to get the kind of growth that you get
19 down south.

20 Uh -- I think, you know, I was pretty -- um -- pretty impressed
21 with the -- the plan that was presented earlier this year by the
22 Forest Service on -- I believe it was ecosystem management. And the
23 people that spoke there for the most part I found seemed -- you know,
24 they were real scientists, and they, you know, I had to agree with
25 them. They were speaking what I believe is the truth. Um -- and

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1 they said that their greatest fear was that they were going to go
 2 through -- because they're doing these studies right now -- I'm sure
 3 you're more aware of it than I am, but they're doing these studies
 4 now and the biggest problem they're having though is time. They need
 5 more time to really do a good study, but they're going to do the best
 6 they can and they've a schedule to work with on uh -- they've got a
 7 schedule to work with as -- deadlines. I -- they had a chart there
 8 with all the deadlines and they had areas listed for studies and that
 9 sort of thing. Um -- but one of the biggest concerns was they would
 10 do all these studies and, you know, I also realize they could do all
 11 these studies, some -- someone outside of the Forest Service or
 12 someone within the Forest Service can just throw all that out. You
 13 know, that could just be thrown out and -- or maybe the studies would
 14 indicate that logging wasn't a good idea in that area. Somebody up
 15 above would tell 'em pull that out. You know, but I felt that the
 16 people at that ecosystem management group -- those scientists were
 17 sincere and, you know, the kind of people that I felt like I could
 18 trust. Um -- the way they were presenting things seemed rational to
 19 me and I would -- I guess I'd like to see more study on this before
 20 um -- you really go about and do any large scale logging like you
 21 have planned.

22 Um -- at this point I can only, you know, support number 5
 23 because I don't think that you don't have the studies. It's real
 24 questionable the data in that. Um -- I know it's a heavily used
 25 area. You know, I know that for a fact. I've been in these areas

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1 every year for, you know, at least the last 5 years, probably close
 2 to 10 years. Um -- so I think that a -- if you got a message from
 3 everybody in Sitka, I'm pretty sure that you'd find for the most
 4 part, most people do not want to see these areas cut. Now I can't
 5 speak for them, but, you know, the tendency -- it's too bad people
 6 aren't coming out at these meetings, you know.
 7 I think a lot of people have given up, you know? Maybe -- or
 8 they feel frustrated. It's like I personally believe it's their
 9 chance. You know, this is a chance to get the message out, but um --
 10 maybe the Forest Service -- I'm not sure if you're doing your best to
 11 let people know what's going on. Um -- I saw it in the newspaper a
 12 while back and I'm not sure if anything's been on the radio or not
 13 other than coverage by the radio, but I'm not sure if the Forest
 14 Service has -- say paid for announcements or that sort of thing,
 15 possibly. Um -- anyway, I'll just let somebody else speak here. But
 16 I -- you know, I think these are highly used areas close to Sitka,
 17 and Sitka's heavily dependent on subsistence hunting and fishing.
 18 And I think that that should be taken into consideration with a great
 19 amount of concern. Thanks.

20 BY MR. FOX:

21 We have approximately 17 more minutes left if anyone else is
 22 interested in providing testimony. Just as a reminder, the record
 23 for comments will be open until October the 2nd. You can provide
 24 written comments at um -- any time prior to that date.

25 BY MR. STRINGHAM:

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1 This is Steve Stringham making a final quick comment here.

2 BY MR. FOX:

3 Okay. Are you ready?

4 BY THE RECORDER:

5 Yeah.

6 BY MR. FOX:

7 Okay.

8 BY MR. STRINGHAM:

9 I would appreciate it if when I read an environmental impact
10 statement that the summary began with the issues that are of greatest
11 concern to people. For instance, in terms of subsistence, if they
12 told us what the impacts were going to be on deer, on bear, on the
13 other species that we use, be these plants or animals, instead of
14 having to wade through the document and basically come out with an
15 answer that we don't know. Because I think that's what the EIS
16 really says in terms of most of the issues that we're dealing with,
17 is that the Forest Service really doesn't know what the impact is
18 going to be. They deal with the particular issues such as habitat
19 capability or they'll talk about the potential of land to slump, but
20 they never seem to carry this to the bottom line. If we're going to
21 have a potential for slumping, and you can do this with a model. You
22 can run it through a model and say that if this slumps, potentially
23 how much material goes into the river. Does this tend to occur in
24 periods of high rainfall or low rainfall. What are the dilution
25 factors? What are the sediment loads? If this occurs during a time

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1 of year when we have salmon eggs that are in there and we have salmon
2 fry, what's the potential impact? We don't just look at direct
3 impacts on salmon. We look at all of the other organisms that live
4 in the water that salmon may feed upon, at least the young fry before
5 they're leaving for the ocean.

6 We have a complex ecosystem and I can't think of one of the
7 basic substantive biological issues that underlie subsistence or the
8 subsistence issues itself which is really answered by this EIS.

9 Basically what it seems to me to do is to give the information that
10 you have, but to present it as though it was really answering the
11 questions. And I don't think it is. Something else has to be done
12 with these EIS's to get down to the bottom lines of what we have to
13 gain and what we have to lose. Thank you.

14 BY MR. FOX:

15 Thank you.

16 (Off the record awaiting any further speakers.)

17 BY MR. FOX:

18 and sat here for the last 2 hours and particularly want to
19 express our appreciation for those that gave testimony. Don't forget
20 that we do have another hearing on September the 27th at the
21 Centennial Building and that the record will remain open until the
22 2nd of October of '95 -- 10 minutes.

23 (Off the record awaiting further speakers.)

24 BY MR. FOX:

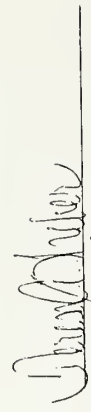
25 It is now 9 p.m. on Monday, September the 11th, 1995. This

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1 hearing is closed. Again, want to thank those that attended and
2 particularly those that did give testimony. Thank you and good
3 evening.
4 (Whereupon the hearing concluded at 9 p.m.)

CERTIFICATION

I hereby certify that the within document is an accurate transcript to the best of my ability of the proceedings recorded by me the 11th day of September, 1995, at the Alaska Native Brotherhood Hall, Sitka, Alaska, beginning at 7:01 pm and ending at 9:00 p.m.


Teresa A. Weber
Words & Company
PO Box 6037
Sitka, AK 99835
(907) 747-7400

HEARING PARTICIPANTS

Michael Fox, Hearing Officer
Jim Franzel, Sitka District Ranger
Cindy Hartmann, Team Member
Doug Stockdale, Sign-in Table

United States Department of Agriculture

Forest Service
Sitka Ranger District
204 Siginaka Way
Sitka, Alaska 99835

Nick Goodwin
Eric Stromey
Valerie Nelson
Robert Ellis
Christine Young
William Miller
Ellen Drury
Jude Pate
Richard Nelson
Steve Stringham
Don Muller
Larry Edwards
Florian Sever
Robert Reid
William Mark Wilson

MATTER: Northwest Baranof Draft Environmental Impact Statement
Alaska National Interest Lands Conservation Act (ANILCA)
Section 810, Subsistence Hearing

DATE: September 27, 1995

TIME: 7:00 p.m. to 9:15 p.m.

PLACE: Centennial Building
330 Harbor Drive
Sitka, Alaska 99835

TRANSCRIPT PREPARED BY:

Ward & Company
PO Box 6037
Sitka, Alaska 99835
(907) 747-7400

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1 BY MR. FOX:

2 Okay. We're gonna start the hearing in about three minutes, so
3 if folks could start settling down.

4 Good evening. This is a public hearing for the ANILCA, Section
5 810 for subsistence for the Northwest Baranof Draft Environmental
6 Impact Statement. My name is Michael Fox and I've been designated by
7 the Forest Service to be the hearing officer for these proceedings.

8 I'd like to welcome you and express our appreciation for all of
9 you that have come in and participated in the hearing and will be
10 giving testimony. I would like to emphasize one thing. This hearing
11 is for the purpose of determining the effects of the project
12 alternatives on subsistence, purely for the purpose of the ANILCA,
13 Section 810. It is not a forum for Proposition 2. So I'll be
14 watchin' that and if it starts getting off of talking to subsistence,
15 I will cut you off.

16 For the record, today is Wednesday, September 27th, 1995. The
17 time is 7 p.m. This hearing is being held in Sitka, Alaska at the
18 Centennial Building. The purpose of this hearing is to get your
19 views on how the alternatives proposed by the Northwest Baranof
20 Timber Sale project may affect the use of the Tongass National
21 Forest. The hearing hours are between 7 and 9.

22 If you intend to give testimony and you have not done so, please
23 sign-in and clearly print your name and who you are representing.

24 When giving testimony, please sit near the microphone so that your
25 testimony will be recorded and state and spell your full name.

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1 If you presented testimony at the hearing on September the 11th,
2 1995, at the Alaska Native Brotherhood Hall, and you wish to provide
3 further testimony here, you will be given that opportunity, but only
4 after those that did not speak at the ANB Hall have a chance to
5 speak. Once again, if you wish to give testimony, please indicate so
6 on the sign-up sheet at the back. We're not just gonna let folks
7 just walk up. It gets a little confusing when -- for our
8 transcriber. All testimony will be limited to 10 minutes. If you
9 wish to provide additional information, time will be made available
10 once everyone that wishes to speak has the opportunity. During the
11 hearing, questions will not be accepted except for those concerning
12 hearing procedures.

13 Information about the plan and the various alternatives were
14 available at the open house preceding this hearing, in addition to
15 the previous open house on September 11. Written testimony will be
16 accepted until October the 16th. Please mail your written testimony
17 or other comments to the Northwest Baranof Planning Team, attention
18 Jim Thomas, 204 Siginaka Way, Sitka, Alaska 99835. Forms for
19 providing either subsistence testimony or general comments are
20 located on the back table. Unless there is any questions on
21 proceedings, the hearing will begin now.

22 Okay. The first person to give testimony is Nick Goodwin.

23 Right up here please.

24 BY MR. GOODWIN:

25 Um -- my name's Nick Goodwin and uh -- I've lived in Sitka for 4

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1 and a half years now. And uh -- I'm not gonna get into the uh --
 2 scientific justifications of when it comes to subsist -- subsistence
 3 impacts on um -- the Northwest Baran -- that the Northwest Baranof
 4 Timber Sale will have around Sitka. Um -- I feel there's people here
 5 that can express that much better. I'm gonna talk about how it
 6 affects me as a person.

7 Um -- like I said, I've lived here for 4 and a half years, and
 8 in that 4 and a half year period I've uh -- slowly evolved to a
 9 subsistence-type way of life until now, today, I have a freezer full
 10 of venison, halibut, salmon and uh -- salmon. And um -- I have lots
 11 of friends where our friendship and our bonds and the community bonds
 12 is based a lot on -- on us trading um -- subsistence gathered stuff
 13 with each other. Um -- for example, I've traded um -- halibut for
 14 dungeness crab, and halibut for -- for um -- sockeye salmon, and I
 15 even worked out a trade -- trade tonight right before the meeting,
 16 you know, maybe some halibut for s -- for some caribou. So um -- a
 17 lot of my friendships in -- in the community -- bonds with me in this
 18 community has to do with a subsistence way of life. Not only does it
 19 um -- create a bond for me with -- with people in the community, also
 20 it uh -- removes me from the marketplace and buying red meat from the
 21 marketplace which is not nearly as good for you and -- and is quite
 22 expensive. And um -- it provides me with, you know, um -- fish which
 23 is really good for you. And again, there's a lot of scientific stuff
 24 that'll back that up that I don't want to get into. But I figure,
 25 you know, just a ballpark figure, I figure that I'm saving at least a

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1 couple thousand dollars a year by going out and hunting my food
 2 rather than buying it in the marketplace. And if you put this
 3 together with all the people in Sitka who -- who count on the
 4 subsistence lifestyle, this amounts to a lot of money and uh -- if
 5 you put in addition to that the community bond it creates, that's
 6 something that you can't put a money price on.

7 Um -- also, um -- I have a job that affords me the opportunity
 8 to walk several very small watersheds throughout the Sitka area and
 9 up west Chicagof, and all the way around Baranof Island. I walk
 10 between 20 and 25 of the smaller creeks and count spawning salmon.
 11 And these are the small creeks where um -- they can't see 'em from
 12 the plane to get fish counts. And most of these watersheds, just
 13 like every bay around here, have been cut already and most of them
 14 were cut at the time when there were no buffer zones. So I see
 15 already the damage that has been caused by clear-cuts, and I'm not
 16 just talking about the amount of fish going up the stream. It's
 17 dependent on lots of other factors, but um -- I've seen, you know,
 18 the second growth first hand, walking up these creeks. And I've seen
 19 where the old um -- haul-out roads are, and where the old CATS have
 20 gone up, and I've seen the old logging roads, and I see where the
 21 second growth is, and I see the uh -- what's happened to the channels
 22 of the streams. And it -- it gets me really emotional when I see the
 23 damage that's happened and um -- I don't like it. And considering
 24 that um -- the major percentage in the Northwest Baranof Timber Sale
 25 -- the major percentage is even age harvesting methods, I think with

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1 the rising price of timber and the um -- rising efficiency of timber
2 extraction using selective harvi -- harvesting methods, should start
3 coming into play um -- and start being used over clear-cutting. And
4 I think it's -- it's going to be worth it and it can be done
5 profitably. And um -- that's why I would urge that um -- the Forest
6 Service go for alternative 5. Thank you.

7 BY MR. FOX:

8 Okay. Our next person to give testimony is Bruce Bennett.

9 BY MR. BENNETT:

10 Actually, I'll -- I'll refrain. I don't feel qualified
11 (indiscernible -- not near microphone)

12 BY MR. FOX:

13 Okay.

14 BY MR. BENNETT:

15 I'll reserve those comments

16 BY MR. FOX:

17 Do you think you'll uh -- want to speak later?

18 BY MR. BENNETT:

19 Uh -- on a more general topic?

20 BY MR. FOX:

21 As long as we don't start talking about proposition 2.

22 BY MR. BENNETT:

23 No, that wouldn't be it.

24 BY MR. FOX:

25 Okay. Next is Eric Strong (ph).

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1 BY MR. STROMEY:

2 Hi. My name's uh -- Eric Strome. And I guess my connection to
3 subsistence like Nick's is uh -- just a community bond that I've had
4 through exchange of subsistence items and um -- it's been a fairly
5 important part of my life within the last two years and that I'm just
6 learning about subsistence in the area and how to make at least part
7 of my living off of the things that are provided for us here.

8 Um -- my direct concerns with the uh -- Environmental Impact
9 Statement and its -- what it has to say about subsistence, are
10 basically that it's really lacking any credible uh -- information for
11 -- for any sort of a decision like this to be made at this time. Um
12 -- being a Draft Environmental Impact Statement, it's -- it's not
13 supposed to say everything that it should yet, but from just studying

14 one section that I've been studying on soils, it really comes out to
15 the point where it's not saying anything at all about how soils are
16 going to affect or how soils are going to be affected by their
17 planned timber harvest. And um -- as we all know, salmon which are
18 spawning in the streams can't really be spawning in streams that are
19 filled with sediment. And in most, if not all of clear-cutting,
20 there's some sediment that leads into the streams. Um -- you can see
21 this in the alluvial fans just about anywhere that's been clear-cut,
22 even with a buffer zone. If you fly over 'em in a plane, you can see
23 the alluvial fans that span out into the ocean from where the rivers
24 and the streams meet the ocean. And it's quite obvious that those
25 are growing and that there is sediment that's being deposited, you

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1 know, into the ocean and from these clear-cut areas, and
 2 significantly has an impact on salmon and -- and their livelihood in
 3 these streams.

4 So I guess in -- in this Environmental Impact Statement, I would
 5 like to see more information about how the -- the high soil mass
 6 movement classes and the extreme soil mass movement classes which
 7 they say in past and existing areas that they plan to log have been
 8 looked at. I would like to see that the past sites that they've
 9 looked at -- I'd like some -- some incredible information about, you
 10 know, if -- if you do an environmental impact statement such as this
 11 -- a draft environmental impact statement, you should also be doing a
 12 follow-up statement right after that -- right after your -- you make
 13 that cut, so that if we are to look at these past sites that have
 14 been cut, then we can look and say okay, well it is depositing this
 15 sediment. Because I think that's pretty obvious and it's only going
 16 to take once or twice to look at it and really see what the -- what
 17 the effects of these are going to be. But you have to go back and
 18 look at somewhere that you've already cut. And that's just what's
 19 not happening right now, and I think it should. That's it.

20 BY MR. FOX:

21 Thank you. Valorie Nelson.

22 BY MS. NELSON:

23 Well, mine was (indiscernible - away from microphone) because I
 24 wanted to kind of hear what was

25 BY MR. FOX:

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1 Well, if you want to defer

2 BY MS. NELSON:

3 what was being said

4 BY MR. FOX:

5 if you want

6 BY MS. NELSON:

7 but I can testify

8 BY MR. FOX:

9 okay

10 BY MS. NELSON:

11 to subsistence uses. I'm -- my name is Valorie Nelson, N-
 12 E-L-S-O-N. I'm a life long resident of Sitka. I've lived here for
 13 40 years. I've partaken in subsistence hunting, fishing. We make
 14 our annual trek to Necker Bay to get sockeye. Uh -- at 5 years old,
 15 I hunted with my father in Nakwasina and all sorts of different

16 places. And I've been privy to the affects that -- that logging has
 17 had on me and they have not been detrimental as far as our

18 subsistence uses in that when I -- 35 years ago when I was a small
 19 kid going hunting with my father, deer were few and far between. We
 20 had to really put in the hours to -- to come home with meat for the
 21 table, and I go out now and have no problem filling the bag limit. I

22 have only shot one deer and it's probably the only one I will ever
 23 shoot. But I do go along with my husband and other family members
 24 and partake of the subsistence in the area.

25 And as far as looking at the alternatives and choosing one or

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1 the other, my preference would probably be alternative 2. It seems
2 to go along with a lot of the areas that have already been logged.
3 My father logged in uh -- Katlian and in Nakwasina many years ago.
4 And I've been able to go out uh -- we have a 15 foot Whaler and we've
5 gone back into Nakwasina Passage and I was commenting to my husband a
6 couple weeks ago about how nice and green and lush the area on the
7 right is that has been clear-cut and is growing back, and the area on
8 the left that hasn't been logged has a lot of dead trees and what
9 not. And as far as aesthetics and scenic view, I think it'd be much
10 better to have clear-cutting with supervision and uh -- I don't think
11 that the clear-cutting in the past has adversely affect -- affected
12 the deer population or the fish population because people seem to be
13 doing really well. So, therefore, with my limited time to review all
14 these reports and what not, my preference would be for probably
15 alternative number 2.

16 BY MR. FOX:

17 Thank you.

18 BY MS. NELSON:

19 Thank you.

20 BY MR. FOX:

21 Richard Nelson.

22 BY MR. NELSON:

23 Could I um -- pass for the moment?

24 BY MR. FOX:

25 Okay.

1 BY MR. NELSON:

2 Could I -- would it be possible to testify a little later?

3 BY MR. FOX:

4 Yes.

5 BY MR. NELSON:

6 Thank you very much.

7 BY MR. FOX:

8 Okay, uh -- Robert Ellis.

9 BY MR. ELLIS:

10 Thank you for the opportunity to speak tonight. It's
11 interesting to see last come first served here. Pretty good system -
12 - sometimes.

13 BY THE RECORDER:

14 Sir, could you please sit a little bit closer to the microphone?

15 BY MR. ELLIS:

16 Well, I could move the microphone. How's that? Okay?

17 BY THE RECORDER:

18 (Inaudible response.)

19 BY MR. ELLIS:

20 My name is Robert Ellis and although the hearing tonight is
21 directed to subsistence issues, the pro-logging bias in this draft
22 EIS is so pervasive that I feel that the entire document must be
23 considered as pertinent to the protection and continuation of the
24 subsistence and hunting resources.

25 I would first digress a little bit about the writing and editing

1 and uh -- I won't go into a great deal of detail on my problems with
 2 the writing and editing, but as I was telling Dick on the way in, it
 3 ranges from a table with no data in it, to a very lengthy discussion
 4 of big game hunting as presented in the crab section. Uh -- the
 5 manuscript needed quite a bit more editing I think before it was
 6 released to the public. This draft is also quite remarkable in it
 7 seemed to want to keep the reader from knowing about the alternative
 8 that was preferred by the Forest Service. No mention is made of a
 9 preferred alternative in the summary or in the accompanying maps.
 10 And the idea that one of the alternatives is preferred, is not
 11 indicated in any of the tables or even in the text that I can find.
 12 The term Forest Service Preferred Alternative is used in -- only in
 13 the Table of Contents and again on page 2-25. It would have been
 14 very helpful to the readers, especially those who lack the time to
 15 study the document in detail, if the Forest Service had identified
 16 alternative 2 as the preferred alternative in each table and in the
 17 discussions of the alternatives.

18 I will go on with comments pretty much page by page. Um --
 19 Chapter 1-2 a peculiar way of uh -- numbering. They uh -- each
 20 chapter has its own sequence of numbers. So when I say Chapter 1-2,
 21 I'm meaning Chapter 1, page 2.

22 The inclusion of fish, game and other resources with obvious
 23 economic -- economic value, should have been included in the
 24 discussion of commodity resources. It is essential to a balanced
 25 reasoning about how the Forest Service are to be managed to include

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1 all the competitive resource uses in the same terms. That is,
 2 tourism, hunting, fishing, guiding, deer and fish all have dollar
 3 values in addition to their aesthetic values.

4 Chapter 1-8: In the sidebar on this page, amenities and
 5 commodities are defined. Here the subsistence use of forest
 6 resources for example, deer and fish should be clearly defined as
 7 having both an amenity and a commodity -- commodity value. The use
 8 of this definition would result in a much more balanced treatment of
 9 all the forest resources in the subsequent sections of the DEIS.

10 Chapter 1-8: The selection of the Northwest Baranof project
 11 area apparently was done without consideration of the fact that this
 12 area supports a major portion of the fish and game used by people in
 13 Sitka. No mention is made of considering taking the timber from
 14 other areas that would have less effect on Sitka's supply of
 15 subsistence items. The data for such an analysis are available of
 16 course, thus I feel that the best available data on subsistence were
 17 not used in selecting the Northwest Baranof area for logging.

18 Chapter 1-11: The description of desired condition mentions
 19 long-term human needs for the traditional harvest of fish, wildlife
 20 and other subsistence resources without acknowledging that the levels
 21 of harvest will likely be reduced as a result of continued logging of
 22 the old-growth forest. The public should be made aware of the likely
 23 outcome of this and similar actions, rather than relegating the
 24 mention of inevitable reductions in subsistence in to remote parts of
 25 the DEIS. The lack of willingness to face the issue of further

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1 reduction in subsistence is demonstrated in the fish and wildlife
2 paragraph on this page where inevitable reduction in deer production
3 from logging is hidden under the cover of and I quote, the size of
4 individual populations may fluctuate from year to year when, in fact,
5 this DEIS and the more -- the recent EIS for Ushk Bay clearly state
6 that the proposed logging will cause reductions in deer populations.
7 The Forest Service should at least be honest with the public.

8 Chapter 1-12: The paragraph Hunting, Fishing and Subsistence,
9 should include a clear statement that the logging induced reduction
10 in numbers of deer available for subsistence and hunting will remain
11 at these reduced levels into the foreseeable future.

12 Chapter 1-13: The economic role of subsistence use in our
13 communities should be part of the description of both Southeast
14 Alaska economics and Sitka economics. The value of subsistence items
15 in Sitka is well over a million dollars a year, and the likelihood of
16 a reduced value if logging continues should be included here to make
17 the picture complete.

18 Chapter 1-14: The role of subsistence economics to individuals,
19 to families, and to the -- and to the community should be included
20 here. The importance of subsistence to family and community values
21 should be included here. The need to include subsistence here is
22 clearly demonstrated in the recently completed Citizen's
23 Comprehensive Plan for Sitka.

24 Chapter 2-17: The section Economic and Social Quality must be
25 expanded to include the economics and social effects of reductions in

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1 fish and game and other forest resource uses due to logging of the
2 old-growth forest. Presently, this section discusses the employment
3 and income related to logging, but with no analysis of accompanying
4 losses to other users. Very important to this section is the
5 question as to where the income from logging goes. That is, are the
6 loggers and employers residents of Sitka, or from other communities
7 in Southeast, or from out of state? Similarly, the economic effects
8 of logging old-growth on other users of the forest should be related
9 to the communities where the people live. Analysis should include
10 the numbers of subsistence families and how they are to make up for
11 the lost forest resources. The numbers of hunting and eco-tour --
12 eco-tourism businesses and potential losses. The loss of income to
13 industries or business associated with hunting and fishing. Losses
14 to businesses like sport shops, boat sales and repair, and fuel deal
15 -- fuel dealers, for example. The meaning of social quality in this
16 section is not clear. Why are the discussion and data restricted to
17 positive effects of logging? Effects on social quality should
18 include conflicts between loggers and traditional users of the area,
19 and be related to the question as to who loses and who gains by the
20 proposed logging. These are questions of social quality that should
21 be central to an objective analysis of the effects of the proposed
22 logging.

23 BY MR. FOX:

24 Excuse me, Mr. Ellis.

25 BY MR. ELLIS:

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1 Yes, sir.

2 BY MR. FOX:

3 How much longer do you have? Your 10 minutes have

4 BY MR. ELLIS:

5 Well, I would like to -- I'd like to read it all if I may,

6 please.

7 BY MR. FOX:

8 About how long will that be?

9 BY MR. ELLIS:

10 Oh, I don't know. Another 10 minutes perhaps.

11 BY MR. FOX:

12 We have uh -- quite a few people to offer testimony and you're

13 welcome to come back

14 BY MR. ELLIS:

15 Okay, does anyone want me to stop?

16 UNIDENTIFIED MALE:

17 Give him an opportunity to finish.

18 UNIDENTIFIED MALE:

19 Keep going.

20 UNIDENTIFIED MALE:

21 Yeah, he can have my time.

22 BY MR. ELLIS:

23 Thank you.

24 Chapter 2-18: The Table 2-9, Comparison of Environmental

25 Consequences, contains a section on economics which seems to be out

1 of place. Economics is not an environmental consequence. If the

2 material on economics remains in Table 2-9, the information must be

3 expanded to include economic effects on all users of the forest

4 resources, not simply the benefits to loggers. The bias toward the

5 positive effects of logging is rampant in this DEIS. The best

6 available data are not included, or if these are the only data

7 available, the plan should be withdrawn and further data collected.

8 Chapter 2-19: The heading or title of this section is not

9 complete. It's just a minor editorial problem, I guess. The subject

10 is not all alternatives, but all action alternatives. Just one more

11 example.

12 Chapter 2-22: This section describes the constraints required

13 on size of harvest units re: clear-cuts. The myth or perhaps better

14 stated, intentional misinformation pertaining to the maximum size of

15 clear-cuts is continued in this section. The text and table contend

16 that the proposed logging in the area will result in clear-cuts of up

17 to 138 acres with special permission for example -- but this is

18 clearly not true. For example, the maps, if you will look at the one

19 -- any one of them, the maps show that we have nearly continuous

20 clear-cuts in Rodman Bay that extend about 16 -- 20 miles from

21 Chatham Strait all the way in and around and then they make a big Y

22 and to the other direction. So we have 20 mile long, whatever, 16

23 miles, it's hard to measure it on there, and these clear-cuts cover

24 thousands of acres. The -- the effects on subsistence will be

25 severe.

Chapter 3-24: Table 5 depicts acres of wildlife habitat in the project before logging and now, and the percent lost. The data presented in this table relative to acres of wildlife habitat are seriously deficient in that they do not differentiate between the different quality or value of different kinds of old-growth forest. It is wrong to assume that all of the old-growth forest is equal in its ability to support wildlife. The higher the quality of the trees or to speak in Forest Service jargon, the higher the volume class, the better it is for wildlife. Considering only the better volume classes, 6 and 7, before 1954, there were about 19,000 acres and today 600. A loss of about 97 percent rather than the spurious 19 percent that's given in the table. If we combine volume classes 5, 6 and 7 so as -- so as to include even poorer quality deer habitat, we have lost about 50 percent of the better deer habitat in the project area.

Chapter 3-42: This section defines subsistence and laws pertaining to subsistence. This is one place where the Forest Service should explain why the Forest Service perpetuates logging even though the Forest Service acknowledges that logging has and will continue to reduce the amount of subsistence resources available. Logging has taken, and is taking, and will continue to take subsistence resources with no recompense to present or future subsistence users. And I think that's really an important point. The subsistence users get nothing.

(Brief pause to change tape.)

(Brief pause to change tape.)

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BY MR. ELLIS:

Chapter 3-43: Subsistence Use Areas. This section implies that only the beach fringe area is used for subsistence resources in the project area. This section must make clear that subsistence resources are gathered from the beach to the alpine areas.

Chapter 3-73: The topic Community Economics is not complete since it lacks discussion of the economics of hunting and fishing for personal use. The values of the products collected and the value of the infrastructure involved are also part of our community economics.

The use of the term "backyard" presents only part of the story. The project area could be more properly called our pantry for our permanent fund or, perhaps, our grocery store and church combined.

The term "backyard" is not appropriate here because of the demeaning aspects of the NIMBY phrase.

Chapter 3-76: The discussion of National Forest payments to the City and Borough of Sitka should make it clear to the reader that the amount received is dependent on the size of the borough and the total Tongass-wide receipts, and not on the amount of timber cut within the borough. If the same amount of timber is cut elsewhere in the Tongass, the payments to Sitka would be the same.

Chapter 3-77: Under Economic Efficiency, the values considered should include the value of subsistence fish and game.

Chapter 3-78: The section on social values once again fails to assign any economic or commodity values to subsistence resources.

Commodity values are assigned to fish, timber and minerals, but not

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1 to subsistence resources. Subsistence resources gives stability to
 2 the economy and to the life of the community. When jobs are scarce
 3 or social benefits reduced, the economic importance of subsistence
 4 resources increases. Subsistence resources dampen the effects of
 5 swings in the overall economy. It is not simply a matter of
 6 lifestyle as it's referred to here, it's a matter of economics and
 7 culture and survival for many in Sitka. And it trivializes the term
 8 subsistence to dismiss it as merely lifestyle.
 9 Chapter 4-1: We're gettin' there. The list of assumptions
 10 here should include this statement: these are multiple use lands
 11 devoted primarily to commodity production and for each commodity,
 12 there is a limit as to how much can be removed. No commodity use
 13 that reduces the value of other commodity uses can proceed without
 14 limit. The point here is that clear-cut logging has already taken 97
 15 percent of the best deer habitat or about 50 percent of all the
 16 forest from the project area.

17 Chapter 4-14: Uh -- this is that table that we have a problem
 18 with editing. Apparently all the data were omitted from this table
 19 except the uh -- totals at the bottom.

20 Chapter 4-18: This section discusses environmental consequences
 21 of logging on fish, but fails to consider and evaluate the
 22 considerable literature on the need to protect salmon streams well
 23 beyond the minimum 100 foot buffer zone.

24 Chapter 4-28: The cumulative effects of this project in
 25 previous clear-cutting in the project area will result in huge second

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1 growth areas with closed canopy. For example, in spite of the
 2 assurance that clear-cuts of one -- over 100 acres will usually be
 3 avoided, Rodman Bay will have a nearly continuous second growth area
 4 about 20 miles long, covering thousands of acres. The real sizes of
 5 clear-cuts resulting from repeated entry into an area should be
 6 described and explained under cumulative effects. The paragraph at
 7 the bottom of page 4-28 seems to com -- contain incorrect data. The
 8 46 percent change in habitat capability for some unspecified species
 9 can not be verified in Table 4-19. That's another serious editing
 10 problem. But what is apparent, is that a significant reduction in
 11 habitat capability has occurred and that this project will make the
 12 problem worse. Since the source cited for the table is not in the
 13 Literature Cited section, the data can not be confirmed or checked in
 14 any way by the reader.

15 Chapter 4-20: The discuss -- 4-30, pardon me. The discussion
 16 of environmental consequences in the marine environment seems to have
 17 overlooked the very important dungeness crab populations in the area.
 18 In fact, existence of crab in the area is not mentioned. The
 19 economic value of the commercial fishery and subsistence fisheries
 20 must be considered. The literature contains descriptions of the
 21 harmful effects of log dumps on crabs, for example. And this
 22 reference is in the Literature Cited, I don't know why you didn't
 23 discuss it. And, of course, commercial and subsistence crab pots and
 24 log rafts and other activities around log dumps do not mix well. The
 25 section Marine Environment should be rewritten.

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Chapter 4-45: The explanation of the limitations and use of the term "habitat capability" given here is not adequate. Even though the statement is made that the estimates are not accurate, the estimates are the basis of much of the data and the discussions in the entire DEIS. Since so much use is made of the term "habitat capability" and so much data on the subject is presented, the Forest Service should do a better job of explaining the subject. The problem of understanding what is going on with habitat capability is made even worse because the reference given a source of the data on the subject is not on the Literature Cited section or any place else in the DEIS. This is a serious omission. Yet another example of inadequate editing is a discussion, as I mentioned earlier, of big game hunting in the shellfish -- shellfish section on this page.

Chapter 4-52: The only conclusion possible after reviewed -- reviewing the data in this DEIS and the provisions of Section 810, that's a subsistence section for ANILCA, is that the Northwest Baranof sale is the one area most unsuitable for the project. This area supplies the most subsistence resources to the most people of any similar sized area in the Tongass. Sitka has the greatest concentration of subsistence users and the largest deer harvest and a large portion of our deer come from the project area. The location of this project could not have been more poorly chosen. The only way to correct this situation is to withdraw the project proposal. The project area should be the very last to be logged if subsistence provisions are the law -- of the law are to be honored.

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458: The conclusions that, and I quote, there is no alternative in this DEIS that will meet TLMP objectives and yet avoid a significant possibility of subsistence restrictions somewhere in the forest may be true. However, logging the Northwest Baranof area once again would cause the greatest reduction in subsistence resources to the greatest number of people for this amount of timber anywhere in the Tongass. And I do have to get a little political here I guess. This proposal is so bad and so destructive of sub -- Sitka's subsistence deer populations that it could have been designed as a bad example by the proponents of protecting the Sitka area from clear-cut logging. It is almost a worse case scenario to illustrate why everyone should vote yes on Proposition 2. Thank you.

BY MR. FOX:

The um -- just to let some of the folks that came in late know, we are not necessarily going in order as they were signed-up. Those folks that testified at the ANB Hall on the 11th will be given the opportunity to testify, but only after those that did not testify before have a chance.

Okay, our next person to give testimony is Christine Young. I remind you to speak into the microphone uh -- so that we have a good recording of uh -- the testimony.

BY MS. YOUNG:

Um -- I reviewed the information provided in the EIS statement by the Forest Service and just picking apart information on saba -- salmon habitat, I found that subsistence is not directly considered

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1 in regards to effects of clear-cut logging on habitat. After
 2 reviewing Volume 11 of the impact statement released regarding timber
 3 sales in Northwest Baranof Island, I've come to the conclusion the
 4 information provided and the comments made summarizing their findings
 5 are contradicting. Entries made by the U.S. Forest Service fisheries
 6 department do not support their summarizing evaluations regarding
 7 potential effects on stream habitat.

8 Case in point, it is noted in the impact summary, page 14,
 9 regarding roads, culverts and bridges that quote, although such risks
 10 are minimal, the comparison of the numbers of Class 1 and 2 streams
 11 crossings help the decision maker assess the relative risks of the
 12 alternative. The problem with this statement assumes that the
 13 numbers of streams documented -- I'm sorry -- a problem with this
 14 statement assumes that there are numbers of streams documented or
 15 reviewed when, in fact, of all the roads and VCU's listed, 24, only 4
 16 of them have any information provided. The others are referred to
 17 the fisheries department -- or referred from the fisheries department
 18 to the hydrology department where neither of the information of VCU
 19 roads are in question. My question is, how can the decision maker
 20 assess the relative risks when they don't even know what they're
 21 dealing with?

22 Additionally, I took into account each review obtained by the
 23 numbers that was provided. The questions I asked myself were, what
 24 methods did they use to come up with the percent -- percentages
 25 regarding the risk or no risk factor to the habitats in question, and

Thank you
 This has been
 corrected in the
 Final EIS

14a. 14b

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1 how were they able to come up with such findings when in many cases
 2 there either was no information provided, no field review,
 3 specialists needed but no field review, no specialist or field
 4 review, only one field review ever listed or no concern for the area.
 5 However, when they did make these comments or remarks, there were
 6 some um -- concerns such as mass soil movement hazards, boundary
 7 questions, Class 1, 2 and 3 um -- habitat presence, suggesting BMP
 8 which is best management plan buffer zones, um -- concerns about
 9 water quality, protection of the wetlands and comments of unmet
 10 tributaries with potential habitat.

11 It is understood that habitat provides shelter, food, rearing
 12 and salmon and hiding places for fish. So why won't the fisheries
 13 division -- why would the fisheries division overlook, ignore or
 14 under staff persons to find out exactly what the consequences of
 15 impact would be on these related areas.

16 Chapter 1, page 11: It is stated that wildlife habitat
 17 diversity has not changed substantially for 50 years, but what is
 18 meant by substantially? What are the numbers? As well, what are the
 19 numbers of populations fish -- are those of wild or hatchery stock?
 20 Are the numbers collected by the same U.S. Forest Service department
 21 which seems to lack information or find what impacts do take place
 22 and the effects are minimal? Clearly um -- it is time for some hard
 23 facts instead of theory, real numbers and statistics instead of
 24 guesswork, and treat true ecosystem management rather than rhetoric
 25 and doctored analysis.

Thank you
 This has been
 corrected in the
 Final EIS

4b

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1 While I may sound like an environmentalist who is one-sided on
 2 this timber issue, on the contrary, I'm a concerned citizen at the
 3 well being of Sitka residents and our environment as a whole.
 4 Habitat is necessary for subsistence living. It is an economy within
 5 itself. Regardless of the fact that clear-cutting is not a sustain
 6 -- is not a sustainable source of profit, the additional loss of
 7 habitat effects our subsistence economy too. So we, the residents of
 8 Sitka begin to lose the very thing which makes us love this place so
 9 much. I'm not an anti-timber sales person. However, the timber
 10 sales re -- resource must be managed in a way that the very ecosystem
 11 we depend on either directly or indirectly is not so affected that we
 12 can't live the lifestyles that we have become accustomed to. Thank
 13 you.
 14 BY MR. FOX:
 15 Okay. Thank you. Mandy Evans.
 16 BY MS. EVANS:
 17 I'd rather not (indiscernible - away from microphone)

18 BY MR. FOX:

19 Okay. William Miller.

20 BY MR. MILLER:

21 Well, first of all I would like to add my name to the testimony
 22 given by Bob Ellis. Uh -- I have some concerns. One is that I use
 23 these areas for my subsistence and recreation. I have a small boat.
 24 These areas represent areas that are accessible by inside waters. In
 25 order to get to them and have them available for my recreation and my

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19a. 190

28k

Please see Appendix C

32

subistence, I feel that clear-cutting at all is detrimental to the
 process.
 Um -- also I think that uh -- either wittingly or unwittingly,
 the Forest Service has been giving a lot of talks lately in Sitka
 seducing the citizens on new experimental uh -- harvesting
 techniques. And I am finding that a -- an extreme number -- a large
 percentage of Sitkans believe that the harvesting being done in the
 Northwest Baranof area will be in terms of clear-cutting of 10 acre
 plots and very small uh -- acreage like that. And this is the
 comments that a lot of people are giving me. In fact, the um -- the
 information was so prevalent and wide spread that even though I'm a
 little bit more up on what's going on in terms of uh -- the timber
 sales in this area, I begin to get confused and I begin to wonder
 myself if uh -- the type of techniques that they'd be using would be
 10 acre clear-cut lots. But that's clearly not the case. In fact,
 it would be impossible to take that much board footage from these
 areas with dainty clear-cuts here and dainty clear-cuts there. Uh --
 and so I would like to be on record as opposing this. Thank you.

19 BY MR. FOX:

20 Okay. Thank you. Ellen Drury.

21 BY MS. DRURY:

22 I am testifying because of my concerns regarding further impacts
 23 on the subsistence in Southeast. For 10 years between 1975 and 85 I
 24 worked as a Community Nutritionist out of the Mt. Edgecumbe Hospital
 25 and traveled to the Native villages from Metlakatla to Yakutat.

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1 Since then I've worked on nutrition projects for SEARHC and from time
 2 to time um -- from time to time -- and now for the past year I've
 3 been volunteering to help the dietician at the Mt. Edgecumbe Hospital
 4 with her outpatient counseling because of her heavy load.

5 A simplistic way to describe what I do in my counseling would
 6 be to say I educate the Native people how to better use the foods
 7 which white man has brought to them, especially since they can not
 8 now obtain enough of their own traditional foods. A large majority
 9 of their present day problems such as diabetes, heart disease, dental
 10 care and others are usually the result of their consumption of highly
 11 processed foods often containing too much fat and sugar. Their
 12 traditional diet was very low in these food components.

13 In the draft summary, a number of impacts um -- a number of
 14 impacts -- a number of impacts of the proposed logging on fish and
 15 wildlife populations and on the marine envi -- environment are
 16 briefly cited. Uh -- we who are aware and concerned about these
 17 impacts have been pointing them out for years. Right now there are
 18 many crushing plans being made to cut all budgets possible and
 19 including the Indian Health Service budget. Are we not robbing
 20 subsistence uh -- values to pay for the timber indu -- the same foods
 21 which protected the health of the Natives for centuries are now being
 22 highly recommended for all of us and consumption has been greatly
 23 increased and will continue to do so.

24 I suggest protection of the fisheries and all other marine life
 25 and gain will be far more valuable to our financial and health

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1 concerns that this short-sighted logging plan even considers. We
 2 should be making every possible effort to guarantee the life of our
 3 fisheries rather than the life of the timber companies.

4 BY MR. FOX:

5 Thank you. Jude Pate.

6 BY MR. PATE:

7 Hello. My name's Jude Pate. I'm representing the Sitka Tribe
 8 of Alaska. I have authority to speak on behalf of the Tribe, the
 9 council authorized me to uh -- give the results of the Tribal
 10 Environmental Impact Statement that was conducted at the Tribe over a
 11 period of month in April. The results have been given to the Forest
 12 Service already as part of the government to government relationship.
 13 And I would like to thank Gary Morrison and the Forest Service for
 14 that -- for honoring the government to government relationship. This
 15 is to put it on public record and let the public know what the Tribe
 16 is doing.

17 Um -- during the month of April there was about 20 citizens uh
 18 -- at a series of meetings who contributed information to a Tribal
 19 Environmental Impact Statement -- statement which focused on the
 20 Northwest Baranof project area. We had them uh -- mark nautical uh --
 21 charts. And they put -- we asked them to put down uh --
 22 subsistence uses, allotments, whether or not they had been granted by
 23 the uh -- federal government which many of them haven't, and
 24 culturally significant sites. Some of the elders were really

25 confused when I asked them to use a red pen for culture, a blue pen

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1 for allotments and a green pen to color in subsistence use areas.
 2 They looked at me like I was nuts because to them, I think, they were
 3 all the same thing. They were all tied together so tightly. That's
 4 one important result of the Tribal Environmental Impact Statement
 5 that I found. And -- and actually if you read ANILCA, that's in
 6 there. The cultural, the dietary, the -- it's all tied in there --
 7 the ties to the land.

8 The 3 areas of concern -- I'll -- I'll show you the map when I
 9 get done. It's a series of overlays. The 3 areas of concern, the
 10 main one would be I think the peninsula right below Saint John
 11 Baptist Bay. Almost every person who tes -- who came to the Tribal
 12 Environmental Impact Statement marked that area. And that seems to
 13 be an area that's very heavily marked for logging. The second area
 14 of concern is the drainage area just north of Katlian Bay. Um --
 15 there's still salmon there I think. And that's marked for logging.
 16 And the third area of concern would be along the lip, the upper
 17 northern lip of Rodman Bay. Those areas seem to be uh -- ones that
 18 were marked heavily for use of subsistence and are under the
 19 preferred alternative 2, are scheduled for logging.

20 I'll show the map, but before I do that, um -- I'd like to thank
 21 the Forest Service especially for the cultural work that they did.
 22 The quality of work on this project far, far surpassed the work on
 23 Ushk Bay and Poison Cove and I think it's because they had their own
 24 good people working on it instead of uh -- contracting it out. And I
 25 really recommend that the Forest Service do that again. They did

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1 quality work. It wasn't perfect, but it was really good. And uh --
 2 with that, I'll just show you the map. It's um -- taken from 3
 3 different nautical charts and reduced to one.

4 You probably can't see too well from way far back, but the green
 5 area

6 BY MR. FOX:

7 Excuse me, Jude.

8 BY THE RECORDER:

9 You're going to have to speak into the microphone or I can't
 10 hear it.

11 BY MR. FOX:

12 It's not picking it up.

13 BY MR. PATE:

14 Well, that's all right

15 BY MR. FOX:

16 for recording

17 BY MR. PATE:

18 Anyway, the green area is the subsistence marked area. Some of
 19 the black ones or the black writing is the particular resource
 20 whether it's salmon, deer, bear, geese, cockles -- some people even
 21 gave away their cockle spots. Um -- the blue is allotments. There's
 22 several allotments on there, and the red is culturally significant
 23 sites. The -- the line you see going like a series of trails is a
 24 trail. It's the Kiksadi survival march trail, and we are working to
 25 have this put on the National Register of Historic Places. It was

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1 after the battle with the Russians um -- in early 1800, 1803, I think
 2 or 1804, and it was the uh -- the trail that the Kiksadi followed
 3 back across around the back side of the island. Um -- there you have
 4 it.

5 BY MR. FOX:

6 Okay. Thank you, Mr. Pate. Okay. Is that uh -- everyone that
 7 wanted to testify other than those that uh -- previously gave
 8 testimony at the ANB Hall? Uh -- Mr. Nelson -- give you the
 9 opportunity again.

10 BY MR. NELSON:

11 If you don't mind.

12 BY MR. FOX:

13 Okay.

14 BY MR. NELSON:

15 Well the reason I wanted to go last is cause I do have quite a
 16 bit of stuff to read here. Make yourselves real comfortable. Uh --
 17 no. I wouldn't do that. I want to thank you and Forest Service very
 18 much for giving uh -- those of us from the community a chance to
 19 um -- testify on our subsistence interest in the area of the
 20 Northwest Baranof Timber Sale.

21 Um -- I -- my particular interest is that I'm a subsistence
 22 hunter and fisher myself. In our household uh -- we eat venison or
 23 fish virtually everyday of the year. Um -- also, I spent about 25
 24 years doing research on subsistence in Native communities around the
 25 state and um -- directed a subsistence study that was done in Sitka

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1 about 13 years ago by the Department of Fish and Game. So I have
 2 both a professional and a personal interest in subsistence.

3 My own uh -- subsistence hunting really focuses on areas outside
 4 the Northwest Baranof Timber Sale, although I've hunted all around --
 5 all around the community including areas in the -- in the sale area.
 6 But I'm very much concerned that depletion of deer populations
 7 anywhere around Sitka will affect any of us wherever -- wherever it
 8 is we hunt. So you know by -- if there is an effect on deer
 9 populations and I'll talk about that in a second, I think that
 10 wherever it is that I hunt or anybody else hunts, we face the
 11 prospect of increasing crowding in areas that have not been affected
 12 assuming that clear-cutting does affect deer populations as well as
 13 possibly fish.

14 I'm very much concerned about the amount of clear-cutting that's
 15 already happened around Sitka including within the Northwest Baranof
 16 Timber Sale and I'm convinced by what I've read that um -- we've
 17 already seen a very serious depletion of the amount of high volume
 18 old-growth timber throughout the northern part of Baranof Island. Um
 19 -- I've been interested in -- in uh -- recent weeks to hear -- I
 20 guess what I would say to look at the difference between folk biology
 21 and scientific biology. And uh -- it's not difficult to understand
 22 why so many people in the community are confused over the issue of
 23 clear-cutting and its effects on deer because I don't question the
 24 truth of what people are saying that they're hunting in areas that
 25 have been clear-cutting -- clear-cut and they're seeing a lot of

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1 deer. But as a subsistence hunter, fisherman myself, I'm concerned
2 um -- enough to look at the uh -- scientific research that's been
3 done on deer in clear-cutting that concludes without exception that
4 the real impacts of clear-cutting on deer populations begins between
5 20 and 30 years after the cuts are made and virtually all of the
6 clear-cutting that's been done around Sitka has been done more
7 recently than 30 years ago. And so we have not yet begun to see the
8 closing of the canopy and the effects that that will have on deer
9 habitat.

10 My pile of references that I have here is just the material out
11 of my own files on uh -- of biological research having to do with the
12 effects of clear-cut logging on deer populations and there is in this
13 pile not a single study that concludes other than the fact that
14 clear-cutting has very serious effects on deer populations. I pulled
15 out a few quotes that I'm presenting because these are the source of
16 my personal concern as a subsistence hunter.

17 The combined effects of food availability, food quality and snow
18 interception by forest canopies make old-growth forest a critical
19 habitat for Sitka black-tailed deer and make deer sensitive to the
20 effects of logging. And that's from Thomas Hanley(ph), a wildlife
21 biologist with the U.S. Forest Service uh -- in Juneau, 1992. The
22 Alas -- here's another one.

23 The Alaska Department of Fish and Game has predicted that under
24 the Tongass Land Management Plan, deer populations will decline by 50
25 to 75 percent in over half of the watershed scheduled for timber

1 harvest in -- on the Tongass during the next 100 years. This will
2 have a significant impact on hunting and other recreational
3 activities. John Shane(ph), wildlife biologist, Alaska Department of
4 Fish and Game, 1990. There are no dep -- deletions from these
5 quotes. I haven't taken a word out of them.

6 Protection of high volume old-growth forest uh -- as critical
7 winter habitat for deer is therefore in direct competition with the
8 timber industry. Dr. David Kline(ph), wildlife biologist on the
9 faculty of the University of Alaska, 1992.

10 Once a stand is placed under a standard silviculture rotation,
11 90 to 125 years, it can never again become old-growth forest. The
12 result of this forest management practice is a permanent conversion
13 of critical deer habitat to a successional stage of inferior value of
14 to deer and perhaps other wildlife species. Ronald Skoog(ph), the
15 former Commissioner of the Department of Fish and Game, as well as
16 Richard Logan(ph) and Donald McKnight(ph), also of Fish and Game
17 Department, 1982.

18 Quote, even moderate timber harvesting can have adverse effects
19 on deer. Olaf Wolmo(ph), wildlife biologist, U.S. Forest Service and
20 John Shane(ph) and Matthew Kirchoff(ph), wildlife biologists with the
21 Alaska Department of Fish and Game, 1982. Two -- three more.

22 Regardless of snow conditions, deer forage is virtually non-
23 existent in even age second growth stands. John Shane(ph), Matthew
24 Kirchoff(ph) and Jeffrey Hughes(ph), wildlife biologists, Alaska
25 Department of Fish and Game, 1988.

1 BY MR. FOX:
2 Excuse me.
3 BY MR. NELSON:
4 Yes sir.
5 (Brief pause to change audio tape.)
6 BY MR. NELSON:
7 Deer use of regrowth -- another quote. Deer use of regrowth
8 areas during severe winters is likely to be so little as to be almost
9 insignificant. This is the Alaska Department of Fish and Game,
10 Wildlife Information Leaflet, number 5, 1978.
11 Finally, clear-cuts produce an abundance of summer forage. I
12 think this relates to the comments that Valerie Nelson was making
13 earlier. Clear-cuts produce an abundance of summer forage but they
14 are often unusable during periods of winter snow and after 20 to 25
15 years the canopy closes creating a dark second growth forest that
16 produces few plants for herbivores (deer) my parenthesis, to eat.
17 This sterile condition persists for more than a century. That's John
18 Shane and Matthew Kirchoff, Alaska Department of Fish and Game, 1988.
19 Well, those I think for me are the source of -- sources of
20 information those quotes all came from these reports. Um -- that
21 give me, I think, ample cause for concern about my own future as a
22 subsistence deer hunter in Sitka and what impacts clear-cutting will
23 have.
24 Now um -- in the study that I was involved with of subsistence
25 hunting and fishing around Sitka for the Department of Fish and Game

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1 Years ago, I'm gonna have to guess these statistics were roughly that
2 76 percent of the households in Sitka have at least one deer hunter
3 in residence. And it was over I think around the mid-80's, lets just
4 guess conservatively, 80 percent of the households have at least one
5 person who participates in subsistence fishing. Um -- I think also
6 it's really important to remember that Sitka is an amazing community.
7 To think of a community of 8,000 people that's so much at the core
8 sort of modern American life, and yet we have this rich and vigorous
9 subsistence um -- component in the subculture of our community. I
10 challenge anyone to find a city the size of Sitka in the lower 48
11 states that even comes close to comparing this. And for this reason
12 I think um -- it's very important that as we look at these timber
13 sales we look at the -- the unique and really um -- extraordinary
14 relationship that this community has to our surrounding environment
15 because of our subsistence economy and our subsistence life land
16 subculture.
17 For me, however, it comes down to something very personal.
18 Subsistence hunting and fishing are really the core of my life. I
19 will defend my hunting and my fishing as dearly as I'll defend
20 anything that matters to me in my life. It is the center of my
21 existence. It's why I live here. Food is what connects me to this
22 place. Food is what binds my heart and my soul to this place that's
23 my home. And that's why I am so concerned about the future here and
24 how we treat this environment that sustains us in so many different
25 ways.

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1 The last thing I want to say is that I don't feel I'm left with
 2 any alternative or any option but to support alternative number 5 um
 3 -- in this environmental impact statement. This does not mean that I
 4 don't support uh -- timber harvesting around Sitka. I think it's
 5 beautiful that we have fisherman out catching fish from our ocean. I
 6 think it's beautiful that we can have people going into the forest
 7 cutting down trees and making a livelihood from it. I think those
 8 things only become ugly and destructive when they're done to excess.
 9 I hope that in the future we will have people working in the woods
 10 and I hope we'll be able to do that forever because I think logging
 11 is a beautiful way to make a livelihood here. I cut trees for my own
 12 life. I use wood everyday. I am not opposed to that. But I do not
 13 think that we should do a kind of timber harvest in here that
 14 destroys um -- or damages our option to continue our subsistence way
 15 of life here and to keep the richness of our community in tact. And
 16 I want to thank you very much again for this chance to speak.

17 BY MR. FOX:

18 Okay. Steve Stringham.

19 BY MR. STRINGHAM:

20 My name is Steve Stringham. I'm President of Wildwatch
 21 Consulting. It's interesting to listen to Nels and some of the other
 22 folks talk about what subsistence means to them. It's interesting to
 23 listen to what people say about what it means to the Native
 24 communities. I've worked with Native communities for many years. I
 25 have some family connection with the Cherokee tribe. I've lived in

Nels and Company

1 the deep wilderness of Alaska and other places much of my life. I've
 2 been driven out of those places by what people call development.
 3 I don't know what your lives mean to you and when you talk about
 4 subsistence you go out in the woods, whether we call it recreation
 5 and other things which so often demean what we do. Reference is made
 6 to lifestyle as if this was something trivial. But I submit to you
 7 this is the core of life. There is a Native phrase, follow a path
 8 with heart. When we follow a path with heart as I, myself, have done
 9 most of my life, there is a connection with the world around you
 10 which obviously you try to put into words. Some succeed like Nels
 11 did earlier, but most of us can't really put it into words. There is
 12 something very deep and profound that becomes the essence of life.
 13 It's why we're alive. We're not in Alaska merely to exist. Most
 14 people are up here because they want to be. They sacrifice something
 15 very special, something tremendous about living up here.

16 Being Alaskan when I first came to this country 25 years ago
 17 meant something. To be an Alaskan to me was the height of what it
 18 meant to be a Human being. What we're doing when we talk about these
 19 clear-cuts is we're destroying what it means to be Alaskan. If
 20 lifestyle is trivial, then we're saying being Alaskan is trivial. We
 21 might as well be Californian. This might as well be an extension of
 22 California. Now I'm not going to continue talking about what
 23 subsistence means to me in that particular sense other than to say
 24 that to trivialize it is to make a point. But I will turn more to
 25 the scientific issues after one brief comment.

Nels and Company

1 Someone earlier alluded to the term NIMBY, Not In My Backyard.
 2 Saying that uh -- this was a NIMBY issue, maybe it shouldn't be. But
 3 I submit to you it is just the exact opposite of a NIMBY issue. Not
 4 In My Backyard means I want the benefits without paying the costs.
 5 And more specifically, it means I want the benefits and let somebody
 6 else bear the costs. The costs are in their backyard. Well,
 7 gentlemen and ladies, we're talking about losing the benefits and
 8 paying the cost for somebody else's benefits. This is just the
 9 opposite of a NIMBY issue.

10 If we are going to look at subsistence from a scientific
 11 standpoint, I said before in my testimony that this document does not
 12 provide the opportunity to do that. By law, whether we're talking
 13 about ANILCA or some of the other documents, the required reveal what
 14 impacts are. This doesn't do it. Now I've talked with many of the
 15 Forest Service employees, some in their offices, some in other
 16 places. I believe that they are people who in general have deep
 17 concern for their jobs. They can see that it's important to supply
 18 jobs for people. It is. And I think a wood products industry is a
 19 great way to do that. Just as the fishing industry is a great way to
 20 do that. I see people in there who are concerned with recreational
 21 opportunities, both in the trivial sense of going out and having a
 22 little fun and in the deeper sense of maintaining your connection to
 23 the world. I see a lot to be admired in the people who work within
 24 the Forest Service and in other places nationally.

25 But I submit to you that as the EIS process is run through the

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1 U.S. Forest Service, it is very, very bad in terms of what it
 2 produces. I don't blame this on the Forest Service personnel. This
 3 is a national issue. It applies to the Federal Energy Regulatory
 4 Commission and other federal agencies. It's a problem nationwide.
 5 But as they say, act -- think globally and act locally, we have to
 6 think nationally and act locally with EISs. We have to look at what
 7 the fundamental flaws in these documents are, and here and now say we
 8 have a right to know what the facts are. The law says we do. We
 9 have rights. We want the facts. We want the opportunity to make
 10 rational, informed decisions about whether the benefits to us
 11 outweigh the costs to us. This document does not provide that
 12 information for anyone.

13 Now what do we mean when we talk about impacts to subsistence?
 14 We mean impacts to the size of game populations and their ability to
 15 produce in excess for us to harvest. We mean changes in access to
 16 these populations because access affects how many are harvested and
 17 whether that harvest becomes excessive. Impact means increased
 18 access in populations and their habitats. Impacts of habitat loss
 19 and change in the govern -- in game populations. In other words, if
 20 you change the habitat, you change populations too. So we need to
 21 know all of these things. We need to know the effects of increased
 22 access by humans in general. We need to know the cumulative impacts
 23 of the whole thing.

24 For instance, when we have loggers come in, it's not enough to
 25 say, oh, there's going to be some increased competition. How many

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1 loggers are going to come in? Now, we may be told well, geez, we
 2 don't know. Well, of course you don't know. The question is how
 3 closely can you predict? When we talk about how many deer will be
 4 killed, how many bear will be killed, how these will change. They
 5 say we don't know. And of course they don't. The question is not
 6 whether they can make an exact prediction. The question is whether
 7 they can make a reasonable prediction.
 8 Now how do we make a reasonable prediction in any facet of
 9 science? We look at past cases. We look where logging has occurred.
 10 We document the changes in populations. We document changes in
 11 access. We document changes in impacts on these from hunting, from
 12 fishing from habitat destruction, et cetera. We go out and we gather
 13 facts. We look at how these different impacts are related to the
 14 changes. We develop models. We test these models with further
 15 data. Then when we come in to a new place like the North Baranof
 16 sale, we have a lot of information on which to make a judgment. Has
 17 it been done here? Well, yes, actually a lot of study has been done
 18 at times and places by Forest Service, by Fish and Game, and by
 19 others, but we don't see that information in this document. So we
 20 don't have the benefit of the past studies that have been done.
 21 We are left in the dark with a very abstract index called a
 22 Habitat Capability Index. This doesn't really tell us anything. Now
 23 let's just assume in the best of all possible worlds that the habitat
 24 capability index modeling is done perfectly. Now we know it's not,
 25 but let's just look at this as though it was. What could it tell us

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1 if we have let's say a 10 percent reduction in habitat capability
 2 index in place for deer populations? Does this mean that the maximum
 3 impact on deer is going to be 10 percent? No, it doesn't tell you
 4 anything of the sort. Consider your own income. If you're income
 5 was to be dropped 10 percent today, what would the impact in your
 6 life be? Now, let's say that you've got credit cards, you've got car
 7 payments, you've got house payments and suddenly your income is 10
 8 percent less. Think about what this does to your life. You may have
 9 to move out of your house because you can't afford the rent anymore.
 10 Or maybe you can't make your car payment and it's repossessed. So
 11 let's say you lose your car. Then suddenly your ability to earn
 12 other money goes down. So the loss of that 10 percent may be
 13 magnified several fold. You don't have a car; you can't work. You
 14 get thrown out of your house. All of the possessions that you've had
 15 suddenly have to be sold at a nickel or dime on the dollar in a
 16 garage sale. That loss of 10 percent can devastate you almost as bad
 17 as a loss of 90 percent.

18 The same thing occurs in wildlife populations and ecosystems.
 19 There is no direct correlation between a change in habitat carrying
 20 capacity and the effect on a population. So using an index of this
 21 sort really doesn't tell us anything. Maybe at the best of all
 22 possible worlds it would tell us this is the minimum impact that
 23 occurred. But I don't think it really even tells us that.

24 There's so much that is going on out there in ecosystems that is
 25 not approached in the document. We have no basis for determining the

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1 impacts in the wildlife populations and ecosystems are on ourselves.
 2 And if I were you, I'd be outraged by this. Not outraged at the
 3 Forest Service, much less the individuals in the Forest Service here.
 4 They're caught up in a process not of their choosing. But I would be
 5 outraged by the whole process.. I'd be outraged by the forces that
 6 keep you from having information that you have a legal and moral
 7 right to have. I would be outraged by having your lives subject to
 8 dramatic change over which you have no real control. Because even if
 9 you come in here and you comment on this, you can't make rational
 10 comments on information that isn't there. You're given fluff. This
 11 is smoke and mirrors my friends, smoke and mirrors. Thank you.

12 BY MR. FOX:

13 Don Muller.

14 BY MR. MULLER:

15 Hi. My name's Don Muller. As I -- as I said at the last
 16 hearing, I would request that you adopt alternative 5, the no action
 17 alternative, based on a single sentence in your draft EIS summary.
 18 That sentence is, the draft EIS concludes that there is a significant
 19 possibility of a significant restriction on subsistence use of deer.
 20 I think we all know that when a resource agency says there is a
 21 significant possibility of a significant restriction, that means that
 22 it is certain. And I don't believe the benefits exceed the -- the
 23 risks.

24 Secondly, um -- just a point on the EIS that hasn't been brought
 25 up. I could find no where in the EIS any assurances that this would

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1 not be a below cost sale. The Tongass is famous for below cost
 2 sales, so I'm assuming that it will be a below cost sale. And,
 3 therefore, that is a -- a severe omission from the EIS.

4 Uh -- the last thing I would like to do is -- I think I've only
 5 spoken for about 3 or 4 minutes. I'd like to use the rest of my time
 6 to request that you ask for a show of hands um -- on the different
 7 alternatives. I -- I know a lot of people come to these and for one
 8 reason or another don't speak, but they do have opinions and maybe we
 9 can take the remaining 5 minutes and ask for a show of hands.

10 BY MR. FOX:

11 I -- because this is a hearing on subsistence (indiscernible
 12 phrase -- mechanical problem) voting process for -- on the
 13 alternatives. But we need to stay within the format. If people are
 14 uncomfortable giving testimony there are forms -- they can use the
 15 form.

16 BY MR. MULLER:

17 Are you interested in what the people feel tonight?

18 BY MR. FRANZEL:

19 (Indiscernible statement was by Mr. Franzel away from the
 20 microphone denying request for a show of hands.)

21 BY MR. MULLER:

22 Sure.

23 BY MR. SEVER:

24 (Indiscernible statement was interjected by Florian Sever from
 25 the back of the room away from the microphone.)

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1 BY MR. FOX:

2 Sir, would you come up and state your name so that we can have
3 that on record please?

4 BY MR. SEVER:

5 (Indiscernible response from Mr. Sever -- away from microphone.
6 Mr. Sever indicated from the back of the room that he was on the list
7 to be a speaker and would wait for his turn.)

8 BY MR. FOX:

9 Larry Edwards.

10 BY MR. EDWARDS:

11 My name's Larry Edwards. I too would like to say that uh -- the
12 wonderful testimony that Bob Ellis gave speaks for me as does the
13 testimony of Richard Nelson and uh -- Steve Stringham and any others
14 who spoke tonight, because I was especially impressed with Bob's.

15 I think one problem that uh -- he was talking about there was uh
16 -- one of the tables on page 3-24. It talks about the effect of this
17 plan on old-growth. It doesn't break that down into what kind of
18 old-growth, what kind of habitat. There is really no indication
19 anywhere in this plan of uh -- how those impacts break out. And I
20 would just like to reflect on why that is.

21 And it's on page uh -- Glossary 7, the definition of old-growth.
22 This is strictly a silvicultural definition. It doesn't get at all
23 into the biological definition of what old-growth is in terms of
24 wildlife habitat. And I would just like to read this here briefly
25 and comment on it a bit more. It says old-growth stands are

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1 characterized by trees well past the age of maturity (dominant trees
2 exceeding 300 years in age). The stands exhibit decline in growth
3 rates and signs of decadence such as dead and dying tree snags and
4 down woody material. The stands include trees of all ages. Multi-
5 layered canopies, a range of tree diameter sizes (including very
6 large diameter trees up to and exceeding 3 meters) and the notable
7 presence of under story vegetation. Old-growth stands are defined in
8 the TIMP inventory as those stands have majority of timber volume
9 trees more than 150 years of age. I see a lot of stuff here that's
10 silvicultural. I don't see anything that uh -- approaches the old-
11 growth definition from the standpoint of uh -- how it plays in the
12 ecosystem itself. And uh -- I feel that uh -- the treatment that is
13 given old-growth in this manner uh -- is replete throughout the whole
14 EIS. And it's one of the many things in here that make this EIS a
15 completely meaningless exercise.

16 Uh -- another thing that I have noticed is that uh -- generally
17 the uh -- EIS confines itself only to the project area with a few
18 exceptions. And one of those is that when it's speaking of
19 subsistence in particular here in general it uh -- speaks in a few
20 places of the contribution of wildlife analysis areas which is a
21 designation of uh -- a land area designation that Fish and Game uses,
22 it speaks of the contribution of wildlife analysis areas outside of
23 the project area to uh -- the use of deer for subsistence and uh --
24 the population of deer in this area saying that it helps this area
25 and that some of the project area is cut. However, uh -- it doesn't

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1 look at the flip side of that which is uh -- what is the impact of
 2 other Forest Service projects past and present uh -- on deer habitat
 3 and populations in those wildlife analysis areas outside this
 4 project. You're not looking at the cumulative effects anywhere in
 5 here at all beyond the boundaries of the project area. You're uh --
 6 you're taking things using what you can of them to your advantage and
 7 you're not looking at the downside of -- of those things.

8 Um -- I will comment in a lot more detail in writing, but I feel
 9 that this EIS is highly unprofessional. It doesn't look at the
 10 impacts. It skirts uh -- a lot of things that should be considered
 11 and weren't. It basically is just ink on the paper. And uh -- it's
 12 just your justification to go ahead and do what you want to do any
 13 way. I don't think that the Forest Service has really looked at the
 14 impacts, generally or specifically the impacts on subsistence. Um --
 15 I think the Forest Service needs to look at what the consequences are
 16 of doing such poor work on an EIS. You should be considering what's
 17 gonna happen in terms of lawsuits. You should consider what this is
 18 uh -- doing in terms of creating citizen movements such as the one uh
 19 -- to get Proposition 2 passed. And you should look at what this is
 20 going to force people to do here when they come down to -- if you go
 21 ahead with this project -- defending their home land.

22 I would like to say that I've lived here 19 years. This place
 23 is a part of me and I'm a part of this place. And I'm gonna defend
 24 my homeland. Thank you.

25 BY MR. FOX:

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1 Florian Sever.

2 BY MR. SEVER:

3 Uh -- for the record, my name is Florian Sever and I'm the
 4 fellow that held my hand up and said that this uh -- Northwest Baranof
 5 Timber Sale does not comply with ANILCA, Section 810. And I think it
 6 uh -- by the Forest Service's own admission in this document that
 7 this whole plan should be scratched. I'd like to begin I guess by
 8 saying that um -- I am in favor of alternative number 5, the no
 9 action alternative and I would just -- I'd also like to say that to
 10 me it's the only reasonable alternative. If the uh -- Forest Service
 11 uh -- intends on uh -- on trying to implement any other alternative,
 12 I believe uh -- this thing will be dead in its tracks. I'll uh -- I
 13 also would like to incorporate the remarks of Steve Stringham, uh --
 14 Dick Nelson, Bob Ellis and Larry Edwards into my remarks by -- by
 15 reference.

16 Uh -- the other night there was a uh -- radio talk show on and I
 17 called in to ask a question about this uh -- Northwest Baranof Timber
 18 Sale. And what it had to do with was the uh -- the percentage of
 19 decrease in habitat capability as far as uh -- black -- Sitka black-
 20 tailed deer uh -- the result of the different alternatives. And uh --
 21 under the no action alternative, the Forest Service admits that
 22 there'll be a 17 percent reduction in habitat capability uh -- due to
 23 past logging practices. In other words, the previous entries into
 24 the Northwest Baranof area have caused a 17 -- a future 17 percent
 25 reduction if nothing is done and the Forest Service did their uh --

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1 analysis that's required under ANILCA and they said that under their
 2 preferred alternative, number 2, that there would only be an
 3 additional 2 percent reduction which amounts to a cumulative impact
 4 of 19 percent reduction. And uh -- this is like saying uh -- well if
 5 somebody has terminal cancer, then maybe it's okay to lop one of
 6 their arms off because, you know, one arm isn't really significant to
 7 somebody who's gonna die anyway.

8 So I guess what I'm saying is that um -- Steve Stringham hit it
 9 right on the head. This is -- this thing is smoke and mirrors. It's
 10 uh -- you know, Woody Guthrie said it one time too. It's pie in the
 11 sky, by and by. This is bologna. All it is, is a bunch of rhetoric
 12 -- pro-timber rhetoric that's been compiled to just -- I think uh --
 13 they just kept writing until they got to an inch so that it fits in
 14 with the rest of these. You see? I mean, how can the Forest Service
 15 in good conscience say that a 19 percent reduction in the very uh --
 16 things that uh -- are, you know, one of the major uh -- values of the
 17 people in this area -- that a 19 percent reduction in that is not
 18 significant. I mean it would seem to me after hearing those facts
 19 that whoever is in charge of the Forest Service would say, well geez,
 20 we can't go in their and log, we have to go in there and some how try
 21 to resurrect the deer populations. And I guess in some perverted
 22 way, they're -- they're trying to convince themselves by clear-
 23 cutting and you get a -- everybody knows by now that, you know, when
 24 you clear-cut you get a -- sort of a, in the big picture, a momentary
 25 increase in the amount of deer, but then after the uh -- canopy

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1 closes in after a period of years, the deer populations begin to
 2 plummet. That's why in North Baranof right now, even if no logging
 3 takes place, 17 percent of the deer habitat capability will go down
 4 the drain.

5 And the next point I'd like to make is that this -- all of these
 6 uh -- this data in -- these charts that are in this book are um --
 7 based on computer models. I uh -- asked around about that. There is
 8 one in particular called TIMTYPE that is admitted by the Forest
 9 Service to have a 50 percent error factor. I mean, if I had a car
 10 that every time I went in there I hit the key and it only started up
 11 50 percent of the time, you know where I would end up? That's where
 12 this timber plan ought to go -- to the junk yard. Now the uh -- the
 13 other thing uh -- this thing -- this plan, all through it, is uh -- I
 14 think the Forest Service has made a conscious, deliberate effort to
 15 obfuscate (sic) what's going on and to cast in the best light
 16 possible uh -- a very pro-timber bias.

17 Now, at this radio call-in, I asked uh -- you know, uh -- of the
 18 two -- the two people who uh -- were responding to the calls, if they
 19 thought this 19 percent reduction was acceptable. And the radio
 20 commentator, the reporter, uh -- interjected that she had asked about
 21 this 2 percent additional decrease that's gonna be uh -- under
 22 alternative 2, what that really meant of one of the operatives in the
 23 Forest Service. And he said, well that equates to two deer, which uh
 24 -- clearly is misinformation, disinformation or just ignorance. I
 25 don't know. But, it just uh -- I'm -- I am, you know, just as Steve

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1 Stringham said, people should be outraged. I am outraged. To me,
 2 that's unconscionable. If you don't know, the say you don't know.
 3 And I think that if the Forest Service would admit that they don't
 4 know, you wouldn't have this document. All you'd have is two gray
 5 covers with nothing in between -- because they don't know.
 6 Uh -- so I guess what I'm saying is, if the Forest Service would
 7 start to proceed on this, it's a sunk ship. And so I'm asking
 8 whoever is in charge to uh -- let reason be their guide and withdraw
 9 this, in the interest of the people of Sitka, in the interest of the
 10 Native community, because this -- the subsistence uh -- even under
 11 skewed data that's in here -- the effects on subsistence are so
 12 severe to the Native community and their culture, that it's just
 13 gonna be one more step towards the break. No pun intended. With
 14 that I'll close.

(Brief pause -- tape changed.)

16 BY MR. REID:

17 You see that I'm -- I'm still writing here. I uh -- my name's
 18 Robert Reid and uh -- I'm -- like to thank the Forest Service for
 19 giving me this opportunity to speak. Um -- I -- I -- okay -- let me
 20 get this right. Okay. I've uh -- I've participated actively as a
 21 subsistence hunter and fisherman since I came to Sitka in April of
 22 1986. I've chosen to live in Sitka because of the subsistence
 23 resources available to me and the quality of life that this affords
 24 me.

25 The Northwest Baranof Timber Sale, options 1 through 4 will

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1 substantially impact my subsistence use in the areas that are logged.
 2 In fact, as far as hunting goes, any area that is clear-cut will not
 3 be used by myself for hunting unless I am desperately hungry. I say
 4 this because I have inadvertently found myself off of my desired
 5 course when coming down from the mountains which is my -- my favorite
 6 place to hunt.

7 You know, I -- I'm leaving my notes now. Yeah, my favorite
 8 hunting is -- is up on top of the mountains. That's where the deer
 9 are out in the open. They can see me. They're -- they're uh -- a
 10 lot harder to uh -- surprise or um -- you know, basically, and I see
 11 -- I see what's out there and I can choose or -- or whatever, which
 12 one I want. Anyway, uh -- in coming down from the mountains, I was
 13 recently in Tenakee and uh -- I hunted there for 6 days and -- and uh
 14 -- I had a wonderful time. There's massive clear-cutting in Tenakee.
 15 Um -- this -- this ties in with the Northwest Baranof Sale.
 16 This an example, most recent in my mind. Um -- Tenakee has been --
 17 has been devastated. It's horrible for that community um -- because
 18 everybody there -- a lot -- most of the people are retired and that,
 19 and subsistence is -- is the way they live. Um -- coming down from
 20 the mountains I -- I uh -- I found myself there, you know, you can't
 21 always see where you're coming down and um -- I can get through any
 22 kind of natural growing forest pretty much. A slide or something can
 23 be difficult, but it's not all that common that you find yourself in
 24 that totally unknowingly.

25 Um -- the clear -- the -- the difficulty I found also in

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1 hunting, you know, we would plan a trip according to topographical
 2 map. Uh -- we would -- we would arrive in this area we hadn't been
 3 in before and we would find that there was a clear-cut right where we
 4 had planned to go up the mountain so we would end up, you know, we
 5 would end up coming somewhere off to the side or we found a spot
 6 where we could get between two of 'em. Uh -- it was hellish. It was
 7 five hours to get 2,500 feet. Um -- I spoke with someone also there
 8 that -- that made the mistake of coming down through a major clear-
 9 cut and 11 eleven hours he said it took him to get through that
 10 thing. He said he wanted to shoot himself. He said they ended up
 11 leaving the deer -- 2 of 'em. A bear got one and they managed to
 12 recover the other one. Um -- that's -- that's one thing. Okay. Um
 13 -- okay.

14 I go on to say here, you know, God forbid that I ever have to
 15 walk all the way through a mile of clear-cut and then wait a minute.
 16 You know, did I say walk? Any of you who've been in clear-cuts of
 17 the age that predominate this area know that you would be more likely
 18 to find yourself heaving yourself up over -- up and over or dragging
 19 yourself under the tangled wreck of old-growth stumps and alders
 20 growing shoulder widths apart. Clear-cuts around here are very green
 21 with alder. I uh -- I put that in thinking of when I walked in the
 22 woman was speaking of how nice and green those clear-cuts looked.
 23 Well, if she got -- if she got close enough to see what kind of trees
 24 they were, I think she would uh -- realize that the reason that they
 25 are nice and bright green is because that's alder growing. Alder

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1 will be the first trees to come in. Um -- they're kind of like a
 2 first step and -- and it's kind of like it -- the forest is healing
 3 itself. The alders come -- they come right in and thank God they
 4 stabilize the soil in a hurry. They grow real fast. Um -- they do --
 5 they do -- some benefit to, you know, covering things up. Um --
 6 okay.

7 Subsistence hunting for me is much more than meat on the table.
 8 For me, it is the hunt, it is the harvest, it is the skinning, the
 9 cleaning, the butchering, the cooking and the life sustained to go on
 10 subsistence hunting and fishing. I believe that the subsistence
 11 lifestyle is the heart of Alaska and I know for me it is at the roots
 12 of -- of my love for this area. I uh -- I didn't -- that's the end
 13 of what I wrote. Uh -- I got a few more things to say.

14 Um -- I mentioned -- I mentioned uh -- when I spoke at the ANB
 15 Hall a few weeks ago, my I uh -- I spoke of my respect for many
 16 persons at the Forest Service. There's some wonderful biologists and
 17 uh -- just some wonderful people that are very good scientists. Um --
 18 there's also a problem with the uh -- the -- the politics. It's
 19 too bad that uh -- politics always get involved in things, but they
 20 do.

21 Um -- and the best example and the one that I gave last time was
 22 -- was Steve Brink. I guess I'm just saying this. It's already on
 23 the record, but um -- but I'm saying this for the benefit of anybody
 24 who's not aware. You know, we uh -- there was an informational
 25 meeting that -- that was set up by the Forest Service I believe to

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1 educate the City assembly and I believe the group, Friends of
 2 Southeast Future. And I attended that meeting and um -- it was --
 3 I'm sure it was open to the public. And uh -- anyway, there was --
 4 there was at least 5 people from the Forest Service. They spoke of
 5 things. Um -- and the -- the most memorable thing -- and my point
 6 here is that Steve Brink um -- he -- he uh -- he mentioned about the
 7 -- the fact that he believed that deer were not uh -- habitat
 8 dependent and I uh -- I thought about it a lot because, you know, I
 9 thought, well, he, you know, he probably doesn't mean what he's
 10 saying. He probably means something different because, I mean nobody
 11 could say that. No thinking person could say that. Um -- and it --
 12 I don't know. I assume he's a -- a politician for the Forest
 13 Service. I don't know that he has any kind of scientific background
 14 um -- I don't know anything. I've never -- I've never seen him
 15 before or since. But, uh -- being that -- that this was what the
 16 Forest Service presented with us as far as uh -- as far as their best
 17 effort to -- to give the City and the people of Sitka some scientific
 18 information, I felt they weren't really acting in good faith if -- if
 19 this is what they were giving us. And that's why I really question a
 20 lot of the science in the um -- in the EIS.

21 And uh -- one other thing -- and that is I -- I'm very involved
 22 in um -- in trying to get uh -- sustainable woods product industry
 23 here in Sitka. I'm a member of the group trying to uh -- buy out the
 24 -- the pulp mill. You know, like the previous owners buying that and
 25 trying to start business. So don't try and peg me as someone who's

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1 um -- against logging. I'm -- I'm a carpenter. I -- I work with
 2 wood every day. Um -- this meeting's on subsistence, so I'll get
 3 back to that. Um -- I can only -- su -- the men -- the reason I
 4 mention this logging thing and my involvement with these groups in
 5 trying to get economic stability and that here, is to let you know
 6 that I would support um -- a kind of logging which would -- could be
 7 sustainable here.

8 And uh -- at the Chamber of Commerce luncheon today someone -- a
 9 guy was speaking and he's from Ketchikan News and um -- I think he
 10 owns the paper there. He uh -- this is all relevant to subsistence
 11 because it's -- subsistence is what's at risk -- subsistence and our
 12 use of the forest. Um -- and, you know, I -- he was talking about --
 13 well, he's -- he's very pro-timber. And uh -- and he was talking
 14 about how we need to -- we need to fight -- we need to fight to keep
 15 this timber industry going. Um -- I worked at Alaska Pulp for many
 16 years and -- and I ended up leaving there because I was very
 17 dissatisfied with what was going on. Um -- and I know that Alaska
 18 Pulp shut down for the reason that uh -- they could not afford to um
 19 -- comply with the EPA's insistence that they move away from chlorine
 20 bleaching. That was the true reason they shut down. Um -- anyway,
 21 so you guys aren't at fault uh -- for shutting down the pulp mill and
 22 all that business like everybody wants to blame you for.

23 Um -- I have to say that I only support um -- alternative 5 at
 24 this time, which is -- which is the no harvest, but I -- I feel
 25 really bad about that because I strongly want to see some selective

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1 harvest done and for anybody in the audience that hears selective
2 harvest and cringes and hears, you know, they're thinking single
3 tree, it's not the truth. You go to the Forest Service. You go to
4 the people who were here three weeks ago or whatever, and spoke about
5 uh -- clear-cutting and selective harvest. They said that selective
6 harvest is the way of the future and I hope that's where Sitka's
7 going with -- with logging, with subsistence. We might as well get,
8 you know, we might as well realize it's not 1950 anymore, you know.
9 We don't need to -- we need -- we don't need to encourage the
10 Japanese to come and um -- take the forest by paying them to do so.
11 You know, we -- we -- it's our resource. Let's use it. And uh -- so
12 I only support option number 5 and uh -- I hope that any others --
13 any other people that are uh -- strongly interested in subsistence go
14 and write themselves and on -- with their comments. Thanks.
15 BY MR. FOX:
16 We'll take a short break and if anyone else wishes to testify,
17 if you'll sign up with Mr. Stockdale in the back of the room, um --
18 we'll get you on as soon as the break's over. There'll be
19 approximately a 5 minute break. And also, once again, there are
20 forms at the back of the room if you wish to make comments in general
21 on the EIS or on the project, or if you wish to make subsistence
22 comments. Uh -- please fill out those forms and submit them. They
23 carry the same weight as oral testimony.
24 Yes, Larry.
25 BY MR. EDWARDS:

1 Sir, would you please clarify whether or not a form is required
2 to make comments or whether you can just write a letter?
3 BY MR. FOX:
4 You can just write a letter. Uh -- we make the form available
5 because a lot of folks don't like to sit down and formally write
6 letters, but uh -- you can scribble it with a crayon on a piece of
7 paper if you want, and it will be given the same weight as oral
8 testimony or uh -- letter written on a word processor.
9 Okay.
10 (Whereupon a brief recess was taken.)
11 BY MR. FOX:
12 Are you ready Terri?
13 BY THE RECORDER:
14 Yes.
15 BY MR. FOX:
16 Okay. We have one more person that had signed up, William
17 Wilson.
18 BY MS. DRURY:
19 I would like to make an addition to mine.
20 BY MR. FOX:
21 Okay. Yes, ma'am. As soon as uh -- Mr. Wilson's done.
22 BY MR. WILSON:
23 Hello. My name is William Mark Wilson. Um -- I spoke during
24 the last public hearing. I'm going to speak again. I'm still for

1 the only ethical and scientifically credible alternative, alternative
2 5. Today I just wanted to add some specific examples. I didn't come
3 very prepared, but luckily when a document's written this poorly, it
4 doesn't take much to prepare.

5 Uh -- I appreciate a lot of what most of the people in the
6 Forest Service have done, but we all know it only takes one bad apple
7 to ruin a pie. Uh -- this document is difficult to understand,
8 biased, contradictory and nebulous. Uh -- for example, Chapter 2,
9 page 14, it states information on brown bear habitat capability
10 reduction. There is information in the text stating one number.
11 Under uh -- the table, Table 2-3, there's another number that is uh --
12 different, contradicting itself. And then again, on Table 29, it's
13 supposed to be uh -- the same table repeated, but it has different
14 numbers. Uh -- right there, simple mistakes that uh -- shouldn't be
15 made in a document that's supposed to have this kind of credibility.
16 Um -- one thing I'd like to talk about is habitat capability index
17 which they base a lot of their uh -- supposedly scientific uh --
18 information on. Uh -- I wrote this short essay on habitat capability
19 on a whim that I'll read now.

20 The Forest Service's ha -- habitat capability index does not
21 show the outcome from a small decrease in percent. When habitat is
22 decreased, even by 1 percent, its effects are magnified. The same
23 populations before the cut has to survive in these conditions. They
24 will not have enough food to support themselves and/or enough
25 shelters to protect themselves. Many species, especially game

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1 species, live throughout many different physical habitats. If a
2 habitat that it is critical but only a small part of its overall
3 habitat, let's say 10 percent of it's time is spent there, then a
4 reduction of one percent overall habitat capability could be a
5 reduction of 10 percent of that critical habitat which may cause uh --
6 -- may not allow a viable habitat for the survival of the species.
7 Also, and just as important are simple predator prey relation-
8 ships. A cut will cause herbivore prey to become malnourished
9 because of the population under with less habitat, thus easier to
10 catch for the predators. There will be an abundance of individuals
11 and also they will be easier to find because of the habitat
12 reduction. Also, predator lanes will be created and will be
13 vulnerable even at the lower populations, the prey will be
14 vulnerable. This will cause a bloom in predators and a rapid fall in
15 prey. The large predator population will then crash behind the prey.
16 When dealing with reality and not just theories and relationships, we
17 must consider stochastic processes.

18 The environment may have massive natural disasters. For
19 example, harsh winters or harsh summers, or something that is very
20 common to clear-cut areas is landslides and blowdowns. When you
21 consider these aspects in our fragile numbers and statistics, that
22 thoroughly removes the scienti -- scientific reasoning and back to
23 the -- the habitats. Again, like brown bear and deer you have listed
24 as the habitat they use are beach fringe, estuary fringe, riparian,
25 old-growth forest and alpine and subalpine. Well the one percent

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1 reduction, we don't know how much reduction it is in any one
2 particular uh -- of these habitats, and we don't know how important
3 in that -- could be critical habitat and they could be cutting. So
4 it could be a lot more serious than the numbers mislead you to -- to
5 believe.
6 Um -- another point I wanted to make was on -- Chapter 3, page
7 22. I just noticed at one point, I went over the Nakwasina River,
8 they talked about a 24D spray they did in June 1968 uh -- to inhibit
9 red alder growth. That surprised me and it mentioned that uh -- the
10 effect on the herbicide on dolly varden, char and coho salmon and
11 various aquatic insects -- insects were uh -- studied. And so I
12 thought how interesting. I'll look at the report and the study that
13 -- that they uh -- referenced. When I looked up your reference, it
14 was simply uh -- a memo to a timber staff manager. I don't consider
15 that a very good reference and I could've written a lot more paper in
16 a lot less time if I'd known I could use memos as reference.

17 On Chapter 4, page 24, we have a table showing resulting -- it's
18 Table 4-15 -- resulting habitat capability index for brown bear in
19 project area by alternative. In the paragraph before, it says, in
20 general, roads are detrimental to bears because they increase
21 opportunities for human/bear interactions. In general, I think, is
22 uh -- kind of leading a biased statement. I think that's obvious to
23 any scientist. It goes on, however, the habitat capability index
24 shown here does not show a reduction in habitat capability due to
25 road construction. The habitat capability models are being modified

Please see Tables
2-8 and 4-13 in
Final EIS.

Please see Table
4-17 in Final EIS.

1 to perform the calculations, but this work has not been completed.
2 Well, I think that's pretty much this draft in a nutshell. It has
3 not been completed and we know that roads are one of the main impacts
4 and to not include them is -- what's the point of even having a
5 stable. But then of course, on the bottom under it you say, note,
6 habitat capability models assume clear-cutting of all harvest units
7 so it exaggerates the effects of the alternatives. Right above here
8 you tell us, right above the Table 4-15, how it's really not adequate
9 because it didn't show as much impact because there's gonna be roads,
10 and then you tell us below it, it's exaggerated. That's
11 contradictory and misleading again.

12 And then uh -- what most people don't get to is Volume II. I
13 can see why. But just for one example, on -- let's see -- road
14 number -- route number 7585. I don't know. There really ain't a
15 page number or anything else I can refer it to. But it talks about
16 uh -- it has examples of temporary road. Well, they have temporary
17 road sections between permanent road sections. I don't know if they
18 plan to put in a logging truck ramp so they can clear those areas
19 since they're temporary roads, or what the -- what that means. I
20 don't see how you can have a temporary road that's a part of a
21 section of a permanent road. It's -- they can't skip over that
22 section to the other part of the permanent road.

23 Um -- another thing it says, it talks about fisheries. It says
24 uh -- specialist needed, none needed. And here the road clearly
25 crosses about -- let's see -- 3 or 4 Class 3 streams and uh -- which

There are no temporary roads
displayed on Road Card 7585.
Please refer to the legend.

This has been
corrected in the
Final EIS.
Thank you.

1 they may not have fish in themselves, but of course they have run off
2 in their tributaries to more important systems. And under fisheries
3 it says uh -- specialists needed, none needed. And it says remarks,
4 see hydrology for remarks. So you go to hydrology, specialists
5 needed, none needed; remarks, none provided. Again, in this -- and
6 if you, you know, can't understand why it continues throughout about
7 -- I couldn't find actually one that didn't have uh -- misunderstand
8 -- the information that was very hard to understand and relate.

9 Uh -- and then in the conclusion, I like how uh -- they -- the
10 draft EIS concludes that there is a significant possibility of the
11 significant restriction of subsistence use of deer. Well, we knew
12 that before we had the EIS. Uh -- if we did all this to determine
13 that, uh -- we wasted a lot of money. Um -- one thing I would like
14 to say in conclusion, is that uh -- what I believe this is really
15 about. I don't believe it's about benefitting the people of the
16 community. I think it's to create a few jobs for a small uh --
17 interest group of people and make money for some few uh -- other
18 people -- very few. Uh -- my father and my grandfather, home town is
19 in Forester, Arkansas. It was a sawmill town. When the sawmill left
20 the town, the -- the town shut down. It's a ghost town. It no
21 longer exists. My family roots are very deeply in -- in timber and
22 logging, but uh -- when the logging town -- when the sawmill moved
23 out, my grandfather got a new job. Um -- and if we're going to
24 create jobs, actually I know more firemen in Sitka than I do loggers.
25 We could just burn the island and create lots of jobs for firemen.

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1 So, what I believe this is about is creating jobs. I think that uh --
2 I can understand people want to keep their livelihoods and their
3 jobs, but uh -- like my grandfather said, logging is a thing of the
4 past. We must move on. Thank you.

5 BY MS. DRURY:

6 I have to -- I have to admit I only had time to look at the
7 draft statement, but I think I know now where Senators Murkowski and
8 Stevens must be getting their signs from. And uh -- I would like to
9 add that I am in favor of alternative 5. I neglected to mention that
10 before.

11 BY MR. FOX:

12 Thank you. Mr. Stringham.

13 BY MR. STRINGHAM:

14 It has been brought to my attention by the Forest Service that
15 when they write EISS, that people don't read them. Well, I think we
16 understand some of the reasons why. To put it simply, the facts in a
17 document like this to the extent that they're there at all are
18 needles in a haystack. If we're going to reduce the size of EISS,
19 let's take out the hay and not the needles.

20 BY MR. FOX:

21 Yes, Mr. Sever.

22 BY MR. SEVER:

23 For the record, my name is um -- Florian Sever. And I'd just
24 like to expand on some comments I made earlier about the uh -- 19

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Thank you.
This has been
corrected in the
Final EIS

Please see
Chapter 1
"Purpose and
Need".

1 percent reduction in wildlife habitat capability as far as uh --
 2 Sitka black-tailed deer in the uh -- North Baranof Timber Sale area.
 3 Um -- I -- in my testimony earlier, I mentioned that um -- one of the
 4 operatives for the Forest Service said that the uh -- additional 2
 5 percent reduction amounted to 2 deer.
 6 What I failed to make uh -- further remarks on was that by the
 7 um -- arithmetic I did, um -- on Table 4-31 at Chapter 4, page 45,
 8 that 2 percent actually comes out to um -- 68 deer and when you
 9 extrapolate that, uh -- the 19 percent would uh -- of total net loss
 10 in wildlife habitat capability would equate to somewhere in the
 11 neighborhood of 650 deer. So it just shows that uh -- you know, uh --
 12 -- when I mentioned earlier that some of the computer models had an
 13 error factor of uh -- 50 percent, this is -- they must be using one
 14 that's really off base for this one, because it's uh -- it's way out
 15 in left field there somewhere.

16 And the other uh -- the other thing I did -- after I heard that
 17 comment on the uh -- the radio talk show, I went and visited the uh
 18 -- Forest Service habitat bio -- habitat biologist, I guess. And we
 19 had -- actually a very nice discussion and uh -- one of the things
 20 that I uh -- was made aware of there that uh -- areas uh -- in
 21 different wildlife analysis areas outside of the project area were
 22 actually being incorporated into the equation that they um -- I guess
 23 that they -- they used to finally find out what the uh -- impacts are
 24 on deer habitat and deer themselves. And what that tells me uh -- I
 25 mean I've been thinking about that. And what that tells me is that

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1 what the Forest Service is doing is intentionally flooding the
 2 equation or skewing the data to the land side of things to show this
 3 great big area that a portion of it is not going to have any impact
 4 at all -- is not going to be impacted at all by the Northwest Baranof
 5 Timber Sale area, but they're using that habitat capability to flood
 6 that side of the equation and then go in and wherever they log and
 7 where they have such detrimental effects on the uh -- high habitat
 8 values there, this massive amount of extra land that they pumped in
 9 or extra habitat sort of floods out and obviscates what the real
 10 impact is on the deer in the project area.

11 So again, it's -- I think it's a conscious effort uh -- you
 12 know, much like Steve Stringham said again -- it's like a smoke and
 13 mirrors routine and I think that uh -- the Forest Service -- it would
 14 benefit them, I think, to get away from that and to start, uh -- you
 15 know, following the dictates of the Chief when he said uh -- when he
 16 first took um -- you know, assumed his office. He said that uh --
 17 the first thing that the Forest Service you know, what we're all
 18 gonna do is start to tell the truth. And I think that that's what we
 19 have to really get back to.

20 Now as far as my comments on ANILCA and why this doesn't comply
 21 to Section 810 of ANILCA, I just refer to Chapter 4, page 53, third
 22 paragraph. And it says, quote, based on the effect of one or more of
 23 the project alternatives on the estimated number of deer available
 24 for harvest by Sitka residents, there is a significant possibility of
 25 a significant restriction of subsistence use of deer for Sitka

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1 residents. It may be possible to minimize this restriction by
 2 regulating non-subsistence uses of areas most heavily used by Sitka
 3 residents for deer hunting. I take that to mean that we're gonna --
 4 the Forest Service is saying, we're going to go in and log it, and if
 5 there's going to be some impacts, if the deer populations are going
 6 to go down, then we're going to make the sport hunters pay for it.
 7 But, the loggers are not going to pay for it; the logging companies
 8 are not going to pay for it; KPC isn't going to pay for it; APC isn't
 9 going to pay for it. Who's going to pay for it? Is the guy that
 10 goes hunting in the woods to -- to provide some subsistence and some
 11 sustenance for his family. I don't think that's right. I don't
 12 think that's morally right.
 13 (Brief pause -- tape changed.)
 14 BY MR. FOX:
 15 Okay.
 16 BY MR. SEVER:
 17 Well, it looks like it ran out right at the right time. Thank
 18 you.
 19 BY MR. FOX:
 20 Okay, thank you. Bob.
 21 BY MR. ELLIS:
 22 This is Robert Ellis and all I wanted to do is to um -- add to
 23 my testimony. I think I failed to indicate that the alternative that
 24 I would select is alternative 5, if the Forest Service does not
 25 withdraw this uh -- proposal. Thank you.

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1 BY MR. NELSON:
 2 Hearing all these people come up and remember what they forgot
 3 to say, I -- I thought geez, I don't know if I said it or not. So I
 4 want to make sure that I did say it. I can't remember what it was
 5 now.
 6 BY MR. FOX:
 7 Would you identify your self
 8 BY MR. NELSON:
 9 Oh, yeah. I'm
 10 BY MR. FOX:
 11 for the record, please?
 12 BY MR. NELSON:
 13 For the record, I'm the guy with Alzheimers. No, don't put that
 14 on the record. I just wanted to say that um -- I do favor
 15 alternative 5 and I wasn't sure that I had said that and -- and um --
 16 I also wasn't sure if I made really clear that I do very much support
 17 the idea of selective um -- truly, truly selective logging, not seed
 18 tree or a facsimile of clear-cutting, but some kind of selective
 19 logging and
 20 UNIDENTIFIED AUDIENCE MEMBER:
 21 (Indiscernible interjection away from the microphone.)
 22 BY MR. NELSON:
 23 Huh? My -- didn't I say my name yet? Richard Nelson.
 24 BY MR. FOX:
 25 Gentleman with Alzheimers.

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1 BY MR. NELSON:

2 Richard -- yeah -- Richard -- Richard A. Nelson, I guess it is;
3 huh? Thanks.

4 BY MR. FOX:

5 Okay, thanks.

6 BY MR. NELSON:

7 I'll stay home next time.

8 BY MR. FOX:

9 Okay. Yes, Larry.

10 BY MR. EDWARDS:

11 Larry Edwards up for the second time here. I also testified the
12 other night and told you that time that uh -- I favor alternative 5.
13 I just wanted to repeat that again tonight to make sure it's on the
14 record. And uh -- I was also just thinking here -- I testified
15 earlier that uh -- basically uh -- the mission of uh -- doing this
16 EIS is just putting ink on paper to justify decisions that are
17 already made. And along that line I would just like to ask that uh --

18 -- the planning team leader or Jim Franzel or somebody, assign some
19 homework to uh -- the people on this planning team and that would be
20 to get a hold of a video that came out -- of a movie that came out in
21 the 1960's called The Sand Pebbles. And uh -- The Sand Pebbles uh --
22 were the crew on a Navy ship uh -- stationed on the Yanksee River in
23 China at the turn of the century called -- what was called The San
24 Pablo. And uh -- their mission was uh -- just basically to be there,
25 steam up and down the river and uh -- as the captain put it to the

1 crew, uh -- fly the flag and put smoke out the stack.

2 Your mission here seems to be kind of the same thing. Just put
3 ink on paper and justify these decisions that are already made and I
4 would just ask that uh -- maybe the planning team look at that and
5 use that -- think of that as a metaphor for what's happening here in
6 the Sitka local area right now and to think of the Chinese nationals
7 who were working on that boat, living in squaller down in the bilge
8 that basically uh -- they're getting this same treatment from the
9 captain who was uh -- the Forest Service in this case -- is the
10 subsistence users are getting deer now. Thank you.

11 BY MR. FOX:

12 Okay, it's now past 9 o'clock. This hearing is over. The
13 record will remain open until October the 16th. Written comments and
14 testimony will be received until that time. All comments are
15 welcome. We want to thank everyone for coming, particularly those
16 that did give testimony to take the time to come in and speak. It is
17 appreciated. Yes ma'am?

18 BY MS. DRURY:

19 What will you do with those tapes?

20 BY MR. FOX:

21 They'll be transcribed and we'll review them for comments during
22 the preparation of the final EIS.

23 BY MS. DRURY:

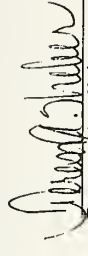
24 Who will do that?

25 BY MR. FOX:

1 This lady over here. Oh, who will transcribe them?
 2 BY MS. DRURY:
 3 the only one who will hear it?
 4 BY MR. FOX:
 5 She'll transcribe them. No ma'am. She'll be doing the
 6 transcribing. The team will be -- the team and Forest Service
 7 management and specialists will be reviewing the
 8 BY MS. DRURY:
 9 Oh.
 10 BY MR. FOX:
 11 transcripts. It's not just
 12 BY MS. HARTMANN:
 13 What's said will be in the final EIS -- word for word --
 14 including all the ums.
 15 BY MR. FOX:
 16 Right. All of the comments will be in the final document --
 17 including the comments about Alzeheimer's.
 18 (Whereupon the hearing concluded at 9:15 p.m.)

CERTIFICATION

I hereby certify that the within document is an accurate transcript to the best of my ability of the proceedings recorded by me the 27th day of September, 1995, at the Alaska Native Brotherhood Hall, Sitka, Alaska, beginning at 7:00 pm and ending at 9:15 p.m.


 Teresa A. Weber
 Words & Company
 PO Box 6037
 Sitka, AK 99835
 (907) 747-7400

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The following transcription codes, excerpted from Manual of Transcript Procedures, Alaska Court System, October 1993, have been used in preparation of the enclosed document. This list is for reference purposes only.

Transcription Codes	
(ph)	Phonetic
(sic)	Non-existent word
Indiscernible	A word or phrase that is unintelligible and can not be transcribed
--	Break in speech; change of thought; repetition; mid-word break
....	Incomplete sentence due to interruption or fade out

Chatham Area Tongass National Forest
Northwest Baranof Planning Team
ATTN: James Thomas
204 Siginaka Way
Sitka, Alaska

Mr. Thomas,

My name is Herman Kitka, Chairman, Sitka AKE and Tlingit and Haida Subsistence Committee.

a | We are in favor of Alternative 5, No Action.
x | We think it is to soon to clear cut the Old Growth that is left in sections of North- west Baranof
x | which forms shelter for our subsistence deer.

Clear cut produces plant growth for deer. The reason Northwest Baranof and Hoonah Sound had a
large increase is because the deer had Old Growth timber to use during the bad winters. We are
afraid if more Old Growth is cut now there will be a lot of winter kill and subsistence users will
suffer. Sitka residents have depended on deer hunting for sport and subsistence use for years.

Before clear cutting in the Sitka area the deer were not so plentiful because of food supply. After
clear cutting the deer populations increased all over with plenty of food in the clear cut areas, but
the areas could not provide adequate protection during the winter months. Sitka sportsman and
subsistence users want to protect their deer by leaving the Old Growth for another 30 years, or at
least until the clear cut area trees are tall enough to form shelter for the deer.

In the winter in Southeast Alaska the deer will use whatever shelter they can find to get out of
the rain & snow and freezing weather.

Sincerely

Herman Kitka Sr.

Herman Kitka, Chairman
Sitka AKE and
Tlingit and Haida
Subsistence Committee

Gary Morrison
Supervisor, Chatham Area
Tongass National Forest
204 Siginaka
Sitka, AK 99835

Dear Mr. Morrison,

Please accept the following comments pertaining to subsistence use of the Northwest Baranof Timber Sale.

19c | I feel that subsistence use of this area is not only insignificant but that any alleged harm to it is tenuous at
19q | best. The small portion of the population of Sitka that utilizes subsistence hunting should not set policy for
19d | the entire NEPA process. The areas in question are all areas of previous harvest and if they are still of such
great consequence it should merely prove that timber harvest does not adversely affect hunting.
Furthermore with the percentage of people living in Sitka being supported by government being as high as
it is, it is high time Sitka is removed from the areas eligible for subsistence.

23p | As for the preferred alternative, it is not adequate because it does not contain enough timber to allow the
USFS to meet market demand for timber as required by TTRA. The NW Baranof planning area should be
used to provide over 150 mmbf of timber to the market. The preferred alternative should be modified to do
this. It should be changed as well as use the existing dump at Appleton Cove to dump the wood at East
Rodman.

Sincerely,

Brian Brown

Brian Brown

MD 616
95052
NOV 24

Alaska National Interest Lands Conservation Act
(ANILCA)

Section 810 Subsistence Hearings
Northwest Baranof
Draft Environmental Impact Statement
Testimony Form

The USDA Forest Service is obtaining public testimony on the Northwest Baranof Draft Environmental Impact Statement. You may use as many of these forms as necessary to provide written testimony on the draft EIS. Please deliver or mail it to the Forest Service. Testimony will be accepted until 5 PM on October 2, 1995.

I AM SUPPORTING ONLY THE NOCUT
ALTERNATIVE. I WOULD FAVOR SELECTIVE CUT
BY VERY SMALL WOODS BUSINESSES. I STRONGLY
BELIEVE IF THIS WERE FOLLOWED IN 50-100 YEARS
YOU (USFS) WOULD BE GLAD YOU DID SO. I AM SUBSISTENCE
IN CHARACTER - EX. 2 "NO CUTE STUNDS" - I
WAS VERY HARD TO BELIEVE - SINK HOLES ARE
NOT ARE THAT UNCOMMON & LOOKING COULD BE TRY
MESS UP THE HYDROLOGY
ON Pg. 34 in Ch. 4 "FISH - No Threatened or Endangered
fish species are known to occur in NWR project
therefore no effects are expected." HOGWASH!
ALL SPECIES ARE EQUALLY VALUABLE - MUST BE
TREATED AS SUCH - THERE IS TOO LITTLE WE DO
NOT KNOW ABOUT SPECIES INTERDEPENDENCE.
I ALSO DO NOT TRUST YOUR PROCESS OF PUBLIC
HEARINGS - IT IS LIKE TO SEE PUBLIC COMMENT
ACRED UPON

ASO I AM REALLY TIRED OF USFS WORKING FOR
THE TIMBER INDUSTRY - RECREATION & TOURISM MUST
BEIN TO HAVE MORE PRIORITY - CHARE JEFFERSON

Mail or deliver this form to:
USDA Forest Service
Northwest Baranof Planning Team
ATTN: Subsistence Hearings, Jim Thomas
204 Signaka Way
Sitka, Alaska 99835

1705 SMC
SITKA

Alaska National Interest Lands Conservation Act
(ANILCA)

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My name is Gary Olson 2006 Cascade Creek Road
Sitka, Alaska 99835 747-5478 home
966-8717 work

Many years ago as I was growing up here in
Sitka the people that wanted our support to
now down the forest said that their sheep will
be revitalized and have stable again in 25-30 years
well folks the time has come I regretfully
request that you refrain from cutting more old
growth forest. As the deer population NEFA the
these areas to live. I rely way heavily on the
opportunities to subsist on deer hunting. An elder
has told me that he has seen deer at his camp
freeze to death. They get wet and the topography
steep and they die. This is due to vanishing old
growth forest. Their home OUR HOME.

Building new roads has the same effect at
making the area disappear.

NONE of the alternatives show your willingness to
re-harvest the old clear cuttings

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204 Signaka Way
Sitka, Alaska 99835

Alaska National Interest Lands Conservation Act
(ANILCA)

Section 810 Subsistence Hearings

Northwest Baranof

Draft Environmental Impact Statement

Testimony Form

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My name is Charlie Tom. My uncle Pete brought me up here in the 60's to help out his father in law Jack Johnson on his fishing boat Jack was in his 70's and needed someone to help him fish and I got up next for the winter for the old man brought him to the best place to hunt that he had found in his opinion; caru. He showed me how to find the deer at all the different holes of the deer. He told me when you go out there because it were a big track all the deer we wanted. I said that I would call the next time he was in town and I would have a good had a but I would have some other things. I would like to go to all over is that I was not here after the evening. I said if I had the place we got most were allowed to hunt and I said we could not have a lot of through the branches the cut off and I said we would track even now to the best place there is no way to hunt and even if you could there is a place there anyway. So we have been trying some of the place where Jack and his hunter go every day where they just cut and guess what? I often do the deer they are the best place. Why don't you why? I often do nothing there for them to eat. I think that if they help this up there would be enough deer around but for enough meat to eat for even my and old Pete who is over 90 now I don't mention some of the other old people who have been to finish up

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Northwest Baranof Planning Team
ATTN: Subsistence Hearings, Jim Thomas
204 Signaka Way
Sitka, Alaska 99835

even young man 10. 41 years old you are you people in the forest Service should be in charge of the logging and also be in charge of deer hunting too. Pete says that like having his dog Ben guard the smoked fish

Yours truly
Charlie Tom
Tom M. P.

USDA Forest Service
Northwest Baranof Planning Team
ATTN: Subsistence Hearings, Jim Thomas
204 Signaka Way
Sitka, AK 99835
15 Sept 1995
Dear Mr. Thomas,

Please accept this as my written testimony form.

23a Far more detail needs to be included in the EIS regarding the economic efficiency of the proposed timber harvests. The short section on page 77 of Chapter 3 states that economic efficiency "is not the sale decision criterion", but clearly it is one, and in this day and age it ought to be a major criterion. Cost/benefit analysis of each of the proposals should be included in the EIS, as you state that systematic evaluation of costs and benefits, have been undertaken in recent years.

23a The full financial cost of the whole timber preparation, layout sale, roading, transport and harvest should be compared to the amount of money which accrues from the timber sale to the Forest Service. The net profit (if any) should be balanced against the prospective environmental consequences which are so fully outlined in the EIS. If some comparison can be made between the environmental consequences (which are difficult to put a dollar value on), and the net financial gain, a more balanced decision can be reached as to whether any of the action alternatives should proceed.

Considerable economic information is presented in the EIS, but it is scattered throughout the document in a disjointed fashion, and much of the information is only barely relevant in the overall picture, and does not pertain to the economics of the various alternatives in this proposal. One of the most useful tables in this regard is 4-48 (page 94, chapter 4), where fuel consumption is compared by alternative. Such dubious formulas as are used to arrive at these figures could logically be extended to dollars of fuel, time spent, salaries, equipment used, structures built or log removal costs.

Some of the costs that need to be put into financial terms are listed below:

-- 2-3 years of planning/field excursions in preparing timber sale, including salaries, transport, etc.

23a -- 9-30 miles of new roads, 9-16 miles of reconstructed road.

-- 3-7 log transfer facilities

-- Cost of timber cutting and transport

I realize that some of these costs accrue to the Forest Service, and some to the logging contractors, but all costs need to be considered to see how much financial sense any of the proposals make.

Many factors need to be considered against these costs on the benefit side of the equation also. Some very dubious formulas are used to equate the timber volume to the numbers of jobs and dollars in salaries. A clear statement needs to be given as to what magnitude of bid could be gained for the timber sale to balance the financial equation.

23e Finally, on the benefit side, you need to consider WHO the timber sale benefits, especially considering it is largely people of Sitka who will suffer the environmental consequences. Will people of this area benefit as much as a distant pulp corporation, or a distant country such as Japan, who may buy the timber or pulp at a cheap price for them, and later resell products in the United States?

23e Environmental consequences for the proposed action have been given in some detail in the EIS. However, the repetition of claims that the level of deleterious effects will be minimal does little to instill confidence that damages will be acceptable, especially when some of the figures presented in the EIS suggest quite disastrous possibilities! For example, the roading necessary to access the relatively small areas of timber harvest is an environmental mess. Action alternatives necessitate the construction of 9-30 miles of new road, and reconstruction of 9-16 miles of pre-existing road. This amounts to 148-368 acres of clearing for new road to access only 1725-3265 acres of harvest -- i.e. about 10% extra

land cleared just to get to the timber (even more including LTF's). The worst aspect regarding these roads, however, is that they must clear 25-65 acres of wetland, be reconstructed through 17-25 acres of sensitive riparian vegetation, and 28-57 acres of roads are to be placed on high-hazard soil where sedimentation is potentially a significant environmental consequence. This may be minimal, but it is not acceptable.

The EIS also claims that roads can be constructed to "preserve natural values and functions of wetlands". (Chapter 4, page 10.) These sort of general claims that roads won't affect wetlands, and that sedimentation won't affect rivers or fish, are throughout the EIS, and are sometimes contradicted by a more sober reality, such as on page 89, chapter 4. Here we read "...the potential for adverse impacts does exist. Sediment production would occur as long as roads are being built and timber is harvested. Sediment would be produced by surface erosion, channel erosion, and mass movement." Also, "Ground-disturbing activities would temporarily increase sediment loads in some streams. This could displace fish, reduce anadromous and resident fish reproductive success, and alter aquatic invertebrate populations."

This statement seems particularly relevant when we consider the location of much of the proposed timber harvest in the 4 alternatives. 512-895 acres of the harvest (about 1/3) is proposed to occur on high-hazard soil where sediment is directly or indirectly likely to end up in anadromous streams. This may be minimal, but it is not acceptable. Of the proposed harvest, 332-796 acres (a high proportion) is to be on wetlands where regeneration is compromised, and 17-25 acres would be in riparian areas. The figure for riparian stands is low because much of what was cut previously was around river systems.

All these factors considered together, with the well-documented prospective further decline of the subsistence deer resource as a result of any of the action alternatives, exacts a high environmental cost for the people of Sitka. For timber harvest to be considered in this area, which has already lost 9% of its old growth forest, there would need to be some substantial, local economic gain for the people of Sitka. Without solid figures as to the likely economic net gain, all that seems to spur the need to sell this timber is the political push to meet market demand and fulfill the aging contract to KPC. Given the distance of KPC from Sitka, and the fact that many of the benefits of harvesting locally would likely benefit

people other than citizens of Sitka, who must bear the brunt of these environmental consequences, I am strongly in favor of the NO ACTION ALTERNATIVE.

Thank you for considering my testimony.

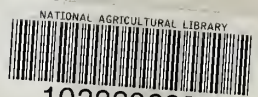
Brent Fagan.

Brent Fagan (BSc, MSc Botany)
76 Park Terrace
Waikuku Beach
Christchurch
New Zealand



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